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ABSTRACT

The "General Mathematics" series is intended to introduce students to basic mathematic principles and concepts and to provide the opportunity to apply those principles and concepts. This module, one of six in the series, will allow students to build or increase their level of understanding of decimals and percents, and will help students develop skills necessary to successfully convert fractions to decimals, convert decimals to percents, and solve problems using fractions, decimals, and percents. Units include: (1) "Place Values of Decimals"; (2) "Rounding Decimals"; (3) "Adding Decimals"; (4) "Subtracting Decimals"; (5) "Multiplying Decimals"; (6) "Dividing Decimals"; (7) "Converting Percents"; (8) "Solving Problems Using Percents"; and (9) "Reviewing Decimals and Percents." The standard format for each unit is as follows: performance objectives; suggested activities; information sheet; tests; pretests; and answer sheets; and, depending on the specific objectives, there may or may not be assignment sheets; job sheets; transparency masters and supplements. (YP)

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MATHEMATICS SERIES
Principles, Concepts and Applications

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DECIMALS AND PERCENTS

BEST COPY AVAILABLE

DECIMALS AND PERCENTS

Developed by the
Curriculum and Instructional Materials Center
Oklahoma State Department of Vocational and Technical Education

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SP1024

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DECIMALS AND PERCENTS

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FOREWORD

The *General Mathematics* series is intended to help students become more competent with basic mathematics. The student will be introduced to the basic mathematic principles and concepts as well as have the opportunity to apply those principles and concepts. The series contains six (6) modules ranging from *Decimals and Percents* to *Measurement* to *Consumer Math* (which includes managing income and basic microcomputer awareness). Each module takes the students through the important areas within the subject matter to ensure a basic working knowledge and skills.

The *Decimals and Percents* module will allow students to build or increase their level of understanding of decimals and percents. This module will also help students develop those skills necessary to successfully convert fractions to decimals, convert decimals to percents, and solve problems using fractions, decimals, and percents found in many everyday situations.

Dr. Roy Peters, Jr., State Director
Oklahoma State Department of
Vocational and Technical Education

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The development of the *General Mathematics: Decimals and Percents* module is credited to the staff of the Oklahoma State Department of Vocational and Technical Education (SDVTE) and various individuals.

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Dirk Allen — Harrah High School
Jan Bull — Mangum High School
Kathy Cloud — Rush Springs High School
Margaret Spann — Lindsey High School
Tod Williams — Newcastle High School

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Terrell B. Ogilvie,
Technical Writer
Curriculum and Instructional
Materials Center

OTHER MODULES IN THE *GENERAL MATHEMATICS* SERIES

GEOMETRY

WHOLE NUMBERS

MEASUREMENTS

FRACTIONS

CONSUMER MATH

Instructional Units

Decimals and Percents contains nine instructional units. A standard format was established in 1970 for development of instructional materials for all Oklahoma vocational teachers. This format includes basic components that form a unit of instruction: performance objectives, suggested activities, pretest, information sheet, assignment sheets, job sheets, transparency masters and supplements, tests, and answers to tests, pretests, and assignment sheets. Depending on the specific objectives, there may or may not be transparency masters, supplements, assignment sheets, or job sheets included in the unit of instruction.

All of the unit components "zero in" on measurable and observable learning outcomes. Teachers are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

Units of instruction are designed for use in more than one lesson or class period of instruction. Careful study of each unit of instruction by the teacher will help him or her determine the following

A. Amount of material that can be covered in each class period
B. Skills that must be demonstrated
    1. Supplies and equipment needed
    2. Amount of practice needed
    3. Amount of class time needed for demonstrations
C. Supplementary materials, such as pamphlets and filmstrips, that must be ordered
D. Resource people to contact

Performance Objectives (white pages)

Each unit of instruction is based on the performance needed for successful employment in an occupational area. Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the performance necessary to reach the unit objective.

Since the objectives of the unit provide direction for the teaching/learning process, it is important that instructors and students have a common understanding of the intent of the objectives. Following is a list of performance terms, their meanings, and behavioral synonyms that may have been used in this material.

A. Name — The individual supplies a name for objects, events, or people

    Behavioral synonyms: Label, list, letter, record, reiterate, repeat, write

B. Identify — The individual selects a named, described, or pictured object by pointing to it, touching it, picking it up, or selecting it

    Behavioral synonyms: Select, mark, match, choose, judge

C. State a rule — The individual communicates a relationship or principle that could be used to solve problems or perform a task

D. Apply a rule — The individual supplies an answer to a problem by using a stated relationship or principle

   Behavioral synonyms: Solve, calculate

E. Describe — The individual relates sufficient characteristics or properties of an object or event so that a second individual will be able to state what is being discussed

   Behavioral synonyms: Define, discuss, interpret, recite, tell how, tell what happens when

F. Distinguish — The individual selects an object or event from two or more that are easily confused

   Behavioral synonyms: Discriminate, differentiate

G. Order — The individual arranges three or more objects or events in a sequence based on a stated property

   Behavioral synonyms: Arrange, sequence, list in order, classify, divide, isolate, sort

H. Construct — The individual makes a physical object, a verbal statement, or a drawing

   (NOTE: *Construct* is used when the finished product or result is important.)

   Behavioral synonyms: Draw, make, build, design, formulate, reproduce, transcribe, convert, put together, compile

I. Demonstrate — The individual performs several operations necessary to carry out a specified process

   (NOTE: *Demonstrate* is used when it is desirable to watch the student perform a task, one of the highest levels of student performance.)

   Behavioral synonyms: Show your work, show procedure, perform an experiment, perform the steps, operate, remove, replace, turn off/on, (dis)assemble, (dis)connect

The objectives should be provided for students and stressed throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods. Prepare for each unit by deciding how each objective can best be taught.

The objective sheet may also be used as a quick pretest to determine prior knowledge of students and to determine whether further study or activities are necessary. Instructors should feel free to modify, delete, or add objectives in order to meet the needs of the students and community. When changes in objectives are made, the instructor should remember to supply the needed information, assignment and/or job sheets, and criterion test items.

Suggested Activities (pink pages)

This component is included only in instructor material. The suggested activities page assists the instructor during the preparation stage of the teaching/learning process by providing suggestions for delivery and/or presentation during the instructional process. Read the suggested activities before teaching the units to allow time to obtain supplemental materials, prepare audio-visual materials, and contact outside resources. Duties of the instructor will vary according to the particular unit.

The references that are listed are ones used in the development of each unit. They should be used by the instructor to supplement her or his knowledge of the subject area or to help students with particular interests or occupational objectives in the area covered.

Pretest (white pages)

This component provides a pre-assessment of the knowledge that a student possesses prior to instruction. In individualized instruction, a student may challenge out of studying some or all of the cognitive objectives. In a group instructional setting, instructors may evaluate the knowledge that a group of students bring with them and determine where instruction should be emphasized.

Supplements (white pages)

Supplements are additional teaching aids that support portions of the information sheet. Supplements include such activities as games, puzzles and additional information. Supplements may be photo-copied for classroom use only.

Transparency Masters (white pages)

Transparency masters provide information in a special way. Transparencies direct the class's attention to the topic of discussion. Transparencies may present new information, or they may reinforce information presented in the information sheet. They are particularly effective when identification is necessary. Make transparencies and place them in the notebook where they will be immediately available for use.

Information Sheet (green pages)

The information sheet provides "must know" content essential for meeting the cognitive (knowledge level) objectives of the unit. The information is written in an outline form and is keyed to the specific objectives.

Instructors will find the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. The information sheet may also be used for coordination activities and advisory committees.

Students should read the information sheet before the information is discussed in class. Space is provided in margins for students and instructors to add notes that supplement, localize, personalize, or provide motivation for each unit.

Assignment Sheets (brown pages)

Assignment sheets give students a chance at problem solving, self-assessment, and/or practical experience with the information. They assist students in the application of knowledge that is a necessary prerequisite to skill development. These may be given to the student for completion in class or used for homework assignments. Answer sheets are provided when appropriate and can be used by the student and/or instructor for checking student progress.

Job Sheets (blue pages)

Job sheets are another important segment of a unit of instruction. The job sheets provide a list of equipment, tools, and materials needed to complete a manipulative or psychomotor skill. They describe a step-by-step procedure needed to complete each task or job. Diagrams, photographs, and illustrations are provided to assist students in achieving the skill.

Instructor should demonstrate to students the procedure outlined in each job sheet. Furthermore, the instructor needs to localize the job sheet according to the equipment and supplies available in the local lab or shop situation. Job sheets also furnish potential employers with a picture of the skills being taught and the performances they might reasonably expect from a person who has had this vocational instruction.

Test (white pages)

This component provides criterion-referenced evaluation of every objective listed in the unit of instruction. It is crucial to note that both paper/pencil and performance objectives must be evaluated.

The tests may be written or oral. It is recommended that the tests be divided into shorter tests covering three or four objectives at a time and given soon after those objectives have been covered. A selection of questions from the units covered may be used for final tests at the end of each term if desired. If objectives have been added, deleted, or modified, be sure to make the changes on the test.

The acceptable response on a unit test, 85 percent in most units, may be raised or lowered to fit the topic or students' ability levels. The percentage applies to the overall score, not to each individual question. The final unit grade should be obtained by using the paper/pencil score along with evaluations of student's demonstrations of the desired skills. The tests are in the instructor's book only but may be photo-copied for classroom use only.

Answers to Pretest, Answers to Test, and Answers to Assignment Sheets (pink pages)

These components are designed to assist the instructor in evaluation of student performances.

Teaching Methods

It is a challenge to keep students motivated. Supplement the objectives by providing the "why," personal experiences, and current information. Prepare for each unit by deciding how each objective can best be taught. Allow students to become involved in preparing and planning.

CORRECTIONS AND SUGGESTIONS

The Curriculum and Instructional Materials Center (CIMC) wants to provide vocational instructors and students with materials that are accurate and effective. Although the CIMC strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications, or have suggestions for improving their usefulness in vocational programs, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected pages and to indicate the correction on the copy. You can then mail the information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, it is important that you notify the CIMC of necessary corrections as soon as possible after discovering the error. Do not assume that someone else will notice the error and inform us; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Coordinator of Curriculum Development
Curriculum and Instructional Materials Center
Oklahoma State Department of Vocational and
Technical Education
1500 West Seventh Avenue
Stillwater, Oklahoma 74074-4364

PLACE VALUE OF DECIMALS
UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to write the place values of six places to the right of the decimal point, write numbers in decimal notation, and write number words as decimal numerals. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with place value of decimals to their correct definitions.
2. Match decimal numerals to their place values.
3. Write numbers in decimal notation.
4. Write decimal numerals as number words.
5. Write number words as decimal numerals.

PLACE VALUE OF DECIMALS
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Pretest
- D. Answers to pretest
- E. Information sheet
- F. Assignment sheets
  1. Assignment Sheet #1 — Write Decimal Notations for Fractions
  2. Assignment Sheet #2 — Write Decimal Numerals and Number Words
  3. Assignment Sheet #3 — Review Place Value of Decimals
- G. Answers to assignment sheets
- H. Test
- I. Answers to test

II. Instructor's guide

- A. Order (or obtain) materials to supplement unit.
- B. Give pretest.
- C. Critique pretest and go over results in class.

  (NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)
- D. Provide students with copies of unit.
- E. Discuss unit and specific objectives.
- F. Discuss information and assignment sheets.
  1. Discuss terms and definitions related to place value of decimals; use Information Sheet, Section I.

SUGGESTED ACTIVITIES

2. Explain the place value of each digit in a numeral with six decimal places; use Information Sheet, Section II.

   - Put examples on the chalkboard, beginning with tenths and working up to millionths.
   - Have students practice writing decimal numbers by calling out numbers for them to write; encourage students to think carefully where to place the decimal.

3. Discuss how to write decimal notations for fractions using Information Sheet, Section III.

   - Put some examples on the chalkboard, and work through the process of changing fractions to decimal notations. Have students put the examples in their notebooks.
   - Put some sample problems on the chalkboard for the students to practice converting.
   - Have students complete Assignment Sheet #1.
   - Go over answers in class.

3. Explain how to write decimal numerals as number words and number words as decimal numerals using Information Sheet, Sections IV and V.

   - Put some examples of number words on the chalkboard. Show students the process of converting the number words into decimal numerals; have students take notes.
   - Put some sample problems on the chalkboard for the students to practice converting.
   - Have students complete Assignment Sheets #2 and #3.
   - Go over answers in class.

G. Give test.

H. Critique test and discuss in class.

I. Reteach and retest as necessary.

II. Unit references — Spann, Margaret. *Related Vocation Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

PLACE VALUE OF DECIMALS
UNIT I

PRETEST

NAME _____ SCORE _____

1. Match terms associated with place value of decimals to their correct definitions. Write the correct numbers in the blanks.

_____a. Any one of the ten numeral symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9	1. Decimal point
_____b. Value or meaning of a digit based on its place or position in a numeral	2. Mixed number
_____c. Zero; used if there is no other digit to occupy that place	3. Digit
_____d. Number consisting of whole and fractional numbers	4. Place holder
_____e. Divides whole numbers from fractional parts of numbers	5. Place value

2. Match the following decimal numberals to their place values. Write the correct numbers in the blanks.

_____a. .03	1. Tenths
_____b. .2469	2. Hundredths
_____c. .7	3. Thousandths
_____d. .945	4. Ten-thousandths
_____e. .010482	5. Hundred-thousandths
_____f. .54321	6. Millionths

3. Write each of the following numbers in decimal notation.

a. $62\ ^{47}/_{100}$ _____

_____

b. $35\ ^{3}/_{10}$ _____

_____

PRETEST

c. $462\ ^{489}/_{1000}$ _____

_____

d. $21\ ^{1}/_{1000000}$ _____

_____

e. $9\ ^{15}/_{100000}$ _____

_____

4. Write each of the following decimal numerals as a number word.

a. 9.023

_____

b. .8

_____

c. 69.0084

_____

d. .543921

_____

_____

5. Write each of the following number words as a decimal numeral.

a. Eighty-four and seven hundredths

_____

b. Three and thirty-four thousandths

_____

c. Ninety-four and ninety-two ten-thousandths

_____

d. Twenty-two millionths

_____

e. Forty-six and sixty-two hundred-thousandths

_____

PLACE VALUE OF DECIMALS
UNIT I

ANSWERS TO PRETEST

1. a. 3
   b. 5
   c. 4
   d. 2
   e. 1

2. a. 2
   b. 4
   c. 1
   d. 3
   e. 6
   f. 5

3. a. 62.47
   b. 35.3
   c. 462.489
   d. 21.000001
   e. 9.00015

4. a. Nine and twenty-three thousandths
   b. Eight tenths
   c. Sixty-nine and eighty-four ten-thousandths
   d. Five hundred forty-three thousand nine hundred twenty-one millionths

5. a. 84.07
   b. 3.034
   c. 94.0092
   d. .000022
   e. 46.00062

PLACE VALUE OF DECIMALS
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Digit — Any one of the ten numeral symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9

B. Place value — Value or meaning of a digit based on its place or position in a numeral

C. Place holder — Zero; used if there is no other digit to occupy that place

D. Mixed number — Number consisting of whole and fractional numbers

E. Decimal point — Divides whole numbers from fractional parts of numbers

(NOTE: All digits to the left of the decimal point represent whole numbers; all digits to the right of the decimal point represent fractional parts of numbers.)

II. Place value of decimals

EXAMPLE:

	Tenths	Hundredths	Thousandths	Ten-thousandths	Hundred-thousandths	Millionths
.0	0	0	0	0	0	1

(NOTE: Each column to the right of the decimal point is called a *decimal place*.)

A. The column directly to the right of the decimal point represents tenths

B. The column 2 places to the right of the decimal point represents hundredths

C. The column 3 places to the right of the decimal point represents thousandths

D. The column 4 places to the right of the decimal point represents ten-thousandths

E. The column 5 places to the right of the decimal point represents hundred-thousandths

INFORMATION SHEET

F. The column 6 places to the right of the decimal point represents millionths

EXAMPLE: In the number .123456, there are six places to the right of the decimal point; it is read one hundred twenty-three thousand four hundred fifty-six millionths.

III. Decimal notation for fractions

(NOTE: Fractions with 10 or a power of 10 as the denominator may easily be written as decimals.)

A. Determine the decimal place

(NOTE: There will be as many decimal places as zeros in the denominator.)

B. Write a decimal point in front of the numerator using zeros as place holders to obtain proper decimal place; leave off the denominator

EXAMPLES: $^{1}/_{10} = .1$; $^{3}/_{100} = .03$; $^{79}/_{1000} = .079$

C. Write mixed numbers with the whole number to the left of the decimal point

IV. Writing decimal numerals as number words

A. Fractions

1. Write the number as you would a whole number

2. Count the number of decimal places to determine the place value; write this at the end of the number word

3. Use zeros as needed for place holders

EXAMPLE: .0825 is written eight hundred twenty-five ten-thousandths.

B. Mixed numbers

1. The word *and* or the word *point* indicates the decimal point

(NOTE: The word *point* is generally used when speaking. The word *and* is used for written numbers.)

2. Number words before *and* or *point* are whole numbers

3. Number words after *and* or *point* are decimal fractions

EXAMPLES: 6.125 is written six and one hundred twenty-five thousandths.
7.381 may be read seven point three eight one.

INFORMATION SHEET

V. Writing number words as decimal numerals

A. Write the whole number (if any), then the decimal point

B. Look at the place designation at the end of the word to determine correct number of decimal places

C. Write numerically using zeros as place holders

EXAMPLES: Seven hundred sixty-three thousandths is written .763.
Two and four hundredths is written 2.04.

PLACE VALUE OF DECIMALS
UNIT I

ASSIGNMENT SHEET #1 — WRITE DECIMAL NOTATIONS FOR FRACTIONS

NAME _____ SCORE _____

1. Match the following decimal notations to the fractions they represent. Write the correct numbers in the blanks.

_____a. $5\ ^{6}/_{10}$	1. 7.83
_____b. $1\ ^{2}/_{100}$	2. 5.006
_____c. $^{87}/_{1000}$	3. 78.7
_____d. $7\ ^{83}/_{100}$	4. .087
_____e. $5\ ^{6}/_{100}$	5. .783
_____f. $5\ ^{6}/_{1000}$	6. 87.7
_____g. $78\ ^{7}/_{10}$	7. 5.6
_____h. $87\ ^{7}/_{10}$	8. 102.0
_____i. 102	9. 5.06
_____j. $^{783}/_{1000}$	10. 1.02

2. Write each of the following numbers in decimal notation.

a. $63\ ^{9}/_{10}$ _____

b. $5\ ^{93}/_{100}$ _____

c. $5\ ^{93}/_{1000}$ _____

d. $5\ ^{93}/_{10000}$ _____

e. $3\ ^{825}/_{1000}$ _____

f. $38\ ^{95}/_{100}$ _____

g. $38\ ^{95}/_{1000}$ _____

h. $42\ ^{3}/_{10}$ _____

i. $402\ ^{3}/_{10}$ _____

ASSIGNMENT SHEET #1

j. $897\ ^{97}/_{100000}$ _____

k. $^{96}/_{100}$ _____

l. $^{96}/_{1000}$ _____

m. $^{96}/_{10}$ _____

n. $9\ ^{6}/_{10}$ _____

o. $96\ ^{0}/_{10}$ _____

p. $9\ ^{6}/_{10000}$ _____

q. $^{55}/_{1000}$ _____

r. $5\ ^{4}/_{100}$ _____

s. $17\ ^{111}/_{1000}$ _____

t. $92\ ^{8}/_{1000000}$ _____

PLACE VALUE OF DECIMALS
UNIT I

ASSIGNMENT SHEET #2 — WRITE DECIMAL NUMERALS AND NUMBER WORDS

NAME _____ SCORE _____

1. Write each of the following as a decimal numeral.

   a. Five and seven tenths _____

   b. Five and seventy-five hundredths _____

   c. Five and seven hundred fifty-six thousandths _____

   d. Seven hundred and fifty-six hundredths _____

   e. Five hundred and five hundredths _____

   f. Eight thousand and eight thousandths _____

   g. Ninety-nine and ninety-nine hundredths _____

   h. Forty-one thousand and forty-one thousandths _____

   i. Ten thousand and one ten-thousandth _____

   j. Fourteen thousand, six and sixty-six hundredths _____

   k. Three hundred eighty-seven thousandths _____

   l. One thousand twenty-five ten-thousandths _____

   m. Twenty-four and six hundred three thousandths _____

   n. Fourteen and two hundredths _____

   o. Sixty-five hundred-thousandths _____

   p. Twenty-three and six ten-thousandths _____

   q. Seventy-five millionths _____

   r. Six hundred sixty-six hundred-thousandths _____

   s. Ninety-seven ten-thousandths _____

   t. Thirty-nine and two hundredths _____

ASSIGNMENT SHEET #2

2. Write each of the following decimal numerals as a number word.

   a. 1.73

   b. .2695

   c. 43.98672

   d. .2

   e. 1.681

   f. 276.276

   g. .00009

   h. .3202

   i. 41.6243

   j. .002

PLACE VALUE OF DECIMALS
UNIT I

ASSIGNMENT SHEET #3 — REVIEW PLACE VALUE OF DECIMALS

NAME _____ SCORE _____

1. Match the following decimal notations to the fractions they represent. Write the correct numbers in the blanks.

_____a.	$3\ ^{3}/_{10}$	1.	24.07
_____b.	$20\ ^{2}/_{10}$	2.	3.003
_____c.	$5\ ^{15}/_{1000}$	3.	18.88
_____d.	$3\ ^{3}/_{100}$	4.	9.00003
_____e.	$12\ ^{63}/_{1000}$	5.	27.000007
_____f.	$24\ ^{7}/_{100}$	6.	20.2
_____g.	$9\ ^{3}/_{100000}$	7.	3.03
_____h.	$3\ ^{3}/_{1000}$	8.	12.063
_____i.	$18\ ^{88}/_{100}$	9.	5.015
_____j.	$27\ ^{7}/_{1000000}$	10.	3.3

2. Write the following numbers in decimal notation.

a. $56\ ^{5}/_{10}$ _____

b. $200\ ^{7}/_{100}$ _____

c. $88\ ^{88}/_{1000}$ _____

d. $12\ ^{6}/_{10000}$ _____

e. $27\ ^{56}/_{1000}$ _____

f. $82\ ^{63}/_{100}$ _____

g. $34\ ^{23}/_{100000}$ _____

h. $28\ ^{8}/_{100}$ _____

i. $39\ ^{3}/_{10}$ _____

j. $5\ ^{55}/_{1000}$ _____

ASSIGNMENT SHEET #3

3. Write each of the following word numbers as a decimal numeral.

   a. Six and six hundredths _____

   b. Two hundred sixty-eight ten-thousandths _____

   c. Five and fifteen ten-thousandths _____

   d. Thirty-six hundredths _____

   e. Two hundred fifty hundred-thousandths _____

   f. Nine and ninety-nine thousandths _____

   g. Four and forty-four millionths _____

   h. Three and thirty-nine ten-thousandths _____

   i. Eight and eight hundredths _____

   j. Twenty-two thousandths _____

PLACE VALUE OF DECIMALS
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. a. 7
   b. 10
   c. 4
   d. 1
   e. 9
   f. 2
   g. 3
   h. 6
   i. 8
   j. 5

2. a. 63.9
   b. 5.93
   c. 5.093
   d. 5.0093
   e. 3.825
   f. 38.95
   g. 38.095
   h. 42.3
   i. 402.3
   j. 897.00097
   k. .96
   l. .096
   m. 9.6
   n. 9.6
   o. 96.0
   p. 9.0006
   q. .055
   r. 5.04
   s. 17.111
   t. 92.000008

Assignment Sheet #2

1. a. 5.7
   b. 5.75
   c. 5.756
   d. 700.56
   e. 500.05
   f. 8000.008
   g. 99.99
   h. 41,000.041

ANSWERS TO ASSIGNMENT SHEETS

i. 10,000.0001
j. 14,006.66
k. .387
l. .1025
m. 24.603
n. 14.02
o. .00065
p. 23.0006
q. .000075
r. .00666
s. .0097
t. 39.02

2. a. One and seventy-three hundredths
   b. Two thousand ninety-five ten-thousandths
   c. Forty-three and ninety-eight thousand six hundred seventy-two hundred-thousandths
   d. Two tenths
   e. One and six hundred eighty-one thousandths
   f. Two hundred seventy-six and two hundred seventy-six thousandths
   g. Nine hundred-thousandths
   h. Three thousand two hundred two ten-thousandths
   i. Forty-one and six thousand two hundred forty-three ten-thousandths
   j. Two thousandths

Assignment Sheet #3

1. a. 10
   b. 6
   c. 9
   d. 7
   e. 8
   f. 1
   g. 4
   h. 2
   i. 3
   j. 5

2. a. 56.5
   b. 200.07
   c. 88.088
   d. 12.0006
   e. 27.056
   f. 82.63
   g. 34.00023
   h. 28.08
   i. 39.3
   j. 5.055

ANSWERS TO ASSIGNMENT SHEETS

3. a. 6.06
   b. .0268
   c. 5.0015
   d. .36
   e. .00250
   f. 9.099
   g. 4.000044
   h. 3.0039
   i. 8.08
   j. .022

PLACE VALUE OF DECIMALS
UNIT I

TEST

NAME _____ SCORE _____

1. Match terms associated with place value of decimals to their correct definitions. Write the correct numbers in the blanks.

_____a. Any one of the ten numeral symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9	1. Decimal point
_____b. Value or meaning of a digit based on its place or position in a numeral	2. Mixed number
_____c. Zero; used if there is no other digit to occupy that place	3. Digit
_____d. Number consisting of whole and fractional numbers	4. Place holder
_____e. Divides whole numbers from fractional parts of numbers	5. Place value

2. Match the following decimal numberals to their place values. Write the correct numbers in the blanks.

_____a. .03	1. Tenths
_____b. .2469	2. Hundredths
_____c. .7	3. Thousandths
_____d. .945	4. Ten-thousandths
_____e. .010482	5. Hundred-thousandths
_____f. .54321	6. Millionths

3. Write the following numbers in decimal notation.

a. $23\ ^{3}/_{100}$

_____

b. $18\ ^{3}/_{10}$

_____

TEST

c. $5\ ^{5}/_{1000}$

d. $11\ ^{24}/_{1000000}$

e. $8\ ^{13}/_{100000}$

4. Write each of the following decimal numerals as a number word.

a. .923

b. 62.2

c. 1.5837

d. .002407

5. Write each of the following number words as a decimal numeral.

a. Seventy-nine and three tenths

b. Five and forty-four hundredths

c. Six thousandths

d. Ninety-one ten-thousandths

e. Eighty-nine millionths

PLACE VALUE OF DECIMALS
UNIT I

ANSWERS TO TEST

1. a. 3
   b. 5
   c. 4
   d. 2
   e. 1

2. a. 2
   b. 4
   c. 1
   d. 3
   e. 6
   f. 5

3. a. 23.03
   b. 18.3
   c. 5.005
   d. 11.000024
   e. 8.00013

4. a. Nine hundred twenty-three thousandths
   b. Sixty-two and two tenths
   c. One and five thousand eight hundred thirty-seven ten-thousandths
   d. Two thousand four hundred seven millionths

5. a. 79.3
   b. 5.44
   c. .006
   d. .0091
   e. .000089

ROUNDING DECIMALS
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to round decimals to the nearest whole number, tenth, hundredth, and thousandth. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Round decimals to the nearest whole number.
2. Round decimals to the nearest tenth.
3. Round decimals to the nearest hundredth.
4. Round decimals to the nearest thousandth.

ROUNDING DECIMALS
UNIT II

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Pretest

D. Answers to pretest

E. Information sheet

F. Assignment sheets

1. Assignment Sheet #1 — Round Decimals to the Nearest Whole Number

2. Assignment Sheet #2 — Round Decimals to the Nearest Tenth

3. Assignment Sheet #3 — Round Decimals to the Nearest Hundredth

4. Assignment Sheet #4 — Round Decimals to the Nearest Thousandth

5. Assignment Sheet #5 — Review Rounding Decimals

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Order (or obtain) materials to supplement unit.

B. Give pretest.

C. Critique pretest and go over results in class.

(NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)

D. Provide students with copies of unit.

E. Discuss unit and specific objectives.

SUGGESTED ACTIVITIES

F. Discuss information and assignment sheets.

1. Explain how to round numbers to the nearest whole number using Information Sheet, Section I.
   - Put examples on the chalkboard for the students to put in their notes.
   - Have the students complete Assignment Sheet #1.
   - Go over the answers in class.
2. Explain how to round numbers to the nearest tenth using Information Sheet, Section II.
   - Put examples on the chalkboard for the students to put in their notes.
   - Have the students complete Assignment Sheet #2.
   - Go over the answers in class.
3. Explain how to round numbers to the nearest hundredth using Information Sheet, Section III.
   - Put examples on the chalkboard for the students to put in their notes.
   - Have the students complete Assignment Sheet #3.
   - Go over the answers in class.
4. Explain how to round numbers to the nearest thousandth using Information Sheet, Section IV.
   - Put examples on the chalkboard for the students to put in their notes.
   - Have the students complete Assignment Sheet #4.
   - Go over the answers in class.
   - For review have students complete Assignment Sheet #5.
   - Go over answers in class.

G. Give test.

H. Critique test and discuss in class.

I. Reteach and retest as necessary.

II. Unit reference — Spann, Margaret. *Related Vocational Math.* Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

ROUNDING DECIMALS
UNIT II

PRETEST

NAME _____ SCORE _____

1. Round the following numbers to the nearest whole number.
   a. 46.35 _____
   b. 101.42 _____
   c. 10.67 _____
   d. .8902 _____
   e. 2.68 _____
2. Round the following numbers to the nearest tenth.
   a. 27.27 _____
   b. .9823 _____
   c. 123.81 _____
   d. 64.92 _____
   e. .457 _____
3. Round the following numbers to the nearest hundredth.
   a. 69.6784 _____
   b. .9325 _____
   c. 4.6728 _____
   d. 21.378 _____
   e. .367 _____
4. Round the following numbers to the nearest thousandth.
   a. 42.4678 _____
   b. 2.1234 _____
   c. .6983 _____
   d. 31.6246 _____
   e. 55.5555 _____

ROUNDING DECIMALS
UNIT II

ANSWERS TO PRETEST

1. a. 46
   b. 101
   c. 11
   d. 1
   e. 3

2. a. 27.3
   b. 1.0
   c. 123.8
   d. 64.9
   e. .5

3. a. 69.68
   b. .93
   c. 4.67
   d. 21.38
   e. .37

4. a. 42.468
   b. 2.123
   c. .698
   d. 31.625
   e. 55.556

ROUNDING DECIMALS
UNIT II

INFORMATION SHEET

I. Rounding decimals to the nearest whole number

A. Look at the digit in the tenths column

B. If the digit in the tenths column is less than 5, drop the decimal point and all digits to the right of the decimal point

C. If the digit in the tenths column is 5 or greater, drop the decimal point and all digits to the right of the decimal point; add 1 to the whole number

EXAMPLES: 2.43 rounded to the nearest whole number is 2.
2.56 rounded to the nearest whole number is 3.

II. Rounding decimals to the nearest tenth

A. Look at the digit in the hundredths column

B. If the digit in the hundredths column is less than 5, drop all digits to the right of the tenths column

C. If the digit in the hundredths column is 5 or greater, drop all digits to the right of the tenths column and add 1 to the digit in the tenths column

EXAMPLES: 2.4321 rounded to the nearest tenth is 2.4.
2.5678 rounded to the nearest tenth is 2.6.

III. Rounding decimals to the nearest hundredth

A. Look at the digit in the thousandths column

b. If less than 5, drop all digits to the right of the hundredths column; if 5 or greater, drop all digits to the right of the hundredths column and add 1 to the digit in the hundredths column

IV. Rounding decimals to the nearest thousandth

A. Look at the digit in the ten-thousandths column

B. If the digit is less than 5, drop all digits to the right of the thousandths column; if 5 or greater, drop all digits to the right of the thousandths column and add 1 to the thousandths column

EXAMPLES: 2.4321 rounded to the nearest thousandth is 2.432.
2.5698 rounded to the nearest thousandth is 2.570.

ROUNDING DECIMALS
UNIT II

ASSIGNMENT SHEET #1 — ROUND DECIMALS
TO THE NEAREST WHOLE NUMBER

NAME _____ SCORE _____

Round the following numbers to the nearest whole number.

1. 3.7 _____
2. 1.4 _____
3. 2.57 _____
4. 2.508 _____
5. 9.3451 _____
6. 5.5 _____
7. 6.0 _____
8. 7.19 _____
9. 8.359 _____
10. 22.4731 _____
11. 18.9 _____
12. 20.356 _____
13. 17.752 _____
14. 6.346 _____
15. 12.815 _____
16. 15.7 _____
17. 22.63 _____
18. 8.691 _____
19. 18.98 _____
20. 4.34 _____

ROUNDING DECIMALS
UNIT II

ASSIGNMENT SHEET #2 — ROUND DECIMALS
TO THE NEAREST TENTH

NAME _____ SCORE _____

Round the following numbers to the nearest tenth.

1. 2.49 _____
2. 2.45 _____
3. 2.43 _____
4. 0.245 _____
5. 3.68 _____
6. 2.133 _____
7. 2.63 _____
8. 4.257 _____
9. .1875 _____
10. .3125 _____
11. .7501 _____
12. .4375 _____
13. 29.92 _____
14. 17.36 _____
15. 8.79 _____
16. 57.67 _____
17. 189.47 _____
18. 98.76 _____
19. 976.47 _____
20. 784.34 _____

ROUNDING DECIMALS
UNIT II

ASSIGNMENT SHEET #3 — ROUND DECIMALS
TO THE NEAREST HUNDREDTH

NAME _____ SCORE _____

Round the following numbers to the nearest hundredth.

1. 9.865 _____
2. .25602 _____
3. 25.6025 _____
4. 3.56768 _____
5. 25.3128 _____
6. 2.436 _____
7. 8.603 _____
8. 99.875 _____
9. 4.283 _____
10. 2.3874 _____
11. 5.3365 _____
12. 29.0076 _____
13. 51.0808 _____
14. 0.2057 _____
15. 56.238 _____
16. .945 _____
17. .1863 _____
18. .258 _____
19. .1218 _____
20. .1064 _____

ROUNDING DECIMALS
UNIT II

ASSIGNMENT SHEET #4 — ROUND DECIMALS
TO THE NEAREST THOUSANDTH

NAME _____ SCORE _____

Round the following numbers to the nearest thousandth.

1. .0156 _____
2. .0132 _____
3. .0625 _____
4. 22.15625 _____
5. 9.21875 _____
6. 275.2656 _____
7. .296875 _____
8. .3125 _____
9. 56.9218 _____
10. 17.7664 _____
11. 289.5366 _____
12. 25.6025 _____
13. 0.25602 _____
14. 3.56768 _____
15. 3.56762 _____
16. 0.7834 _____
17. 46.7954 _____
18. 83.8276 _____
19. 2764.3546 _____
20. 78.3965 _____

ROUNDING DECIMALS
UNIT II

ASSIGNMENT SHEET #5 — REVIEW ROUNDING DECIMALS

NAME _____ SCORE _____

Round the following numbers to the nearest whole number, to the nearest tenth, to the nearest hundredth, and to the nearest thousandth. Write the answers in the correct columns.

	Nearest Whole Number	Nearest Tenth	Nearest Hundredth	Nearest Thousandth
1. .6257				
2. 5.2339				
3. 1.8663				
4. .4062				
5. 3.1417				
6. 12.6673				
7. .9875				
8. 26.4375				
9. 21.7837				
10. 127.5941				

ROUNDING DECIMALS
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. 4
2. 1
3. 3
4. 3
5. 9
6. 6
7. 6
8. 7
9. 8
10. 22
11. 19
12. 20
13. 18
14. 6
15. 13
16. 16
17. 23
18. 9
19. 19
20. 4

Assignment Sheet #2

1. 2.5
2. 2.5
3. 2.4
4. .2
5. 3.7
6. 2.1
7. 2.6
8. 4.3
9. .2
10. .3
11. .8
12. .4
13. 29.9
14. 17.4
15. 8.8
16. 57.7
17. 189.5
18. 98.8
19. 976.5
20. 784.3

Assignment Sheet #3

1. 9.87
2. .26
3. 25.60
4. 3.57
5. 25.31
6. 2.44
7. 8.60
8. 99.88
9. 4.28
10. 2.39
11. 5.34
12. 29.01
13. 51.08
14. .21
15. 56.24
16. .95
17. .19
18. .26
19. .12
20. .11

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

1. .016
2. .013
3. .063
4. 22.156
5. 9.219
6. 275.266
7. .297
8. .313
9. 56.922
10. 17.766
11. 289.537
12. 25.603
13. 0.256
14. 3.568
15. 3.568
16. 0.783
17. 46.795
18. 83.828
19. 2764.355
20. 78.397

Assignment Sheet #5

	Nearest Whole Number	Nearest Tenth	Nearest Hundredth	Nearest Thousandth
1.	1	.6	.63	.626
2.	5	5.2	5.23	5.234
3.	2	1.9	1.87	1.866
4.	0	.4	.41	.406
5.	3	3.1	3.14	3.142
6.	13	12.7	12.67	12.667
7.	1	1.0	.99	.988
8.	26	26.4	26.44	26.438
9.	22	21.8	21.78	21.784
10.	128	127.6	127.59	127.594

ROUNDING DECIMALS
UNIT II

TEST

NAME _____ SCORE _____

1. Round the following numbers to the nearest whole number.
   a. 75.63 _____
   b. 8.79 _____
   c. 3.1274 _____
   d. 1.983 _____
   e. .98931 _____
2. Round the following numbers to the nearest tenth.
   a. 25.37 _____
   b. 43.3336 _____
   c. 7.787 _____
   d. .8321 _____
   e. .7531 _____
3. Round the following numbers to the nearest hundredth.
   a. 63.634 _____
   b. 123.935 _____
   c. 3.476 _____
   d. .4547 _____
   e. .6754 _____
4. Round the following numbers to the nearest thousandth.
   a. 21.3875 _____
   b. .6755 _____
   c. .5802 _____
   d. 15.7573 _____
   e. 44.4444 _____

ROUNDING DECIMALS
UNIT II

ANSWERS TO TEST

1. a. 76
   b. 9
   c. 3
   d. 2
   e. 1

2. a. 25.4
   b. 43.3
   c. 7.8
   d. .8
   e. .8

3. a. 63.63
   b. 123.94
   c. 3.48
   d. .45
   e. .68

4. a. 21.388
   b. .676
   c. .580
   d. 15.757
   e. 44.444

ADDING DECIMALS
UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to write decimals in the proper form for addition, add the numerals, locate the decimal point in the sum, and solve applied story problems. This ability will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Solve addition problems which involve decimal numerals.
2. Solve story problems involving addition of decimals.

ADDING DECIMALS
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Pretest
- D. Answers to pretest
- E. Information sheet
- F. Assignment sheets
  1. Assignment Sheet #1 — Add Decimals
  2. Assignment Sheet #2 — Write and Solve Decimal Number Problems
  3. Assignment Sheet #3 — Solve Story Problems
- G. Answers to assignment sheets
- H. Test
- I. Answers to test

II. Instructor's guide

- A. Order (or obtain) materials to supplement unit.
- B. Give pretest.
- C. Critique pretest and go over results in class.

  (NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)
- D. Provide students with copies of unit.
- E. Discuss unit and specific objectives.
- F. Discuss information and assignment sheets.
  1. Explain how to add decimal numerals using Information Sheet, Section I.
     - Put examples of addition problems on the chalkboard to demonstrate the process of adding decimals; have students take notes.

SUGGESTED ACTIVITIES

- Have students complete Assignment Sheet #1.
- Go over answers in class.
- Have students complete Assignment Sheet #2.
- Go over answers in class. Have students put their solutions on the chalkboard to show how to set up the problem before solving it.

2. Discuss how to solve story problems involving the adding of decimal numerals; use Information Sheet, Section II.

- Put several story problems on the chalkboard, and work through them in class so students can see the process they should be using. Have students take notes.
- Have students complete Assignment Sheet #3.
- Go over answers in class.

G. Give test.

H. Critique test and discuss in class.

I. Reteach and retest as necessary.

III. Unit reference — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

ADDING DECIMALS
UNIT III

PRETEST

NAME _____ SCORE _____

1. Solve the following problems by writing them in columns and adding.

   a. 2.6 + 7.5 + 2 =

   b. 8.3 + .063 + 1.42 =

   c. 48.32 + 67.8000 + 4.623 =

   d. 91.045 + .623 + 4.1 =

PRETEST

e. $42.53 + $6.27 + $4.25 + $12.42 =

2. Solve the following story problems.

a. A piece of pipe was 6.423 inches long. The scrap piece and the waste from cutting were 4.112 inches. How long was the pipe before it was cut?

b. Susan cut a piece of ribbon into lengths of 4.25 inches, 6.15 inches, 12.42 inches, and 15.33 inches. How long was the original piece of ribbon?

ADDING DECIMALS
UNIT III

ANSWERS TO PRETEST

1. a. 12.1
   b. 9.783
   c. 120.743
   d. 95.768
   e. $65.47

2. a. 10.535 inches
   b. 38.15 inches

ADDING DECIMALS
UNIT III

INFORMATION SHEET

I. Adding decimals

A. Write the given numbers (addends) in a column under each other with the decimal points directly under each other

(NOTE: You can add zeros so each number has the same amount of decimal places. This will make it easier to add columns.)

B. Add each column of numbers as if they were regular whole numbers

C. Locate the decimal point in the sum by placing it directly under the decimal points in the addends

EXAMPLE: .857 + 2.1 + 370.057 + 753 =

.857	.857
2.1	2.100
370.057	370.057
+ 753.	+ 753.000
1126.014	1126.014

II. Solving story problems

A. Read the problem

B. Decide on the procedures necessary to solve the problem

C. Write and solve the numerical problem

D. State answer in type of item requested

EXAMPLES: Bolts, dollars

ADDING DECIMALS
UNIT III

ASSIGNMENT SHEET #1 — ADD DECIMALS

NAME _____ SCORE _____

Add each column of numbers, carrying when necessary. Place a decimal point in the sum directly under the above decimal points.

EXAMPLES:

$$\begin{array}{r} .26 \\ +\ .168 \\ \hline .428 \end{array} \qquad \begin{array}{r} 4.607 \\ +\ .408 \\ \hline 5.015 \end{array}$$

1. $\begin{array}{r} .024 \\ +\ .165 \\ \hline \end{array}$

2. $\begin{array}{r} .873 \\ +\ .199 \\ \hline \end{array}$

3. $\begin{array}{r} 4.6 \\ +\ 4.62 \\ \hline \end{array}$

4. $\begin{array}{r} .0003 \\ +\ .0099 \\ \hline \end{array}$

5. $\begin{array}{r} 5.00 \\ +\ .99 \\ \hline \end{array}$

6. $\begin{array}{r} 4.5 \\ +\ .008 \\ \hline \end{array}$

7. $\begin{array}{r} 62.14 \\ +\ 8.87 \\ \hline \end{array}$

8. $\begin{array}{r} 3.487 \\ +\ 9.645 \\ \hline \end{array}$

9. $\begin{array}{r} .5 \\ .6 \\ +\ 8.3 \\ \hline \end{array}$

10. $\begin{array}{r} 195.7 \\ 83. \\ +\ 9.006 \\ \hline \end{array}$

11. $\begin{array}{r} 21.5 \\ 18.9 \\ +\ 32.8 \\ \hline \end{array}$

12. $\begin{array}{r} .0131 \\ .1640 \\ +\ .2229 \\ \hline \end{array}$

ASSIGNMENT SHEET #1

13.
$$\begin{array}{r} 8.69 \\ 3.07 \\ +\ 17.50 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 4.612 \\ .958 \\ +\ .885 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 5.29 \\ 4.38 \\ +\ 9.62 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 72.24 \\ 16.38 \\ +\ 92.37 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 1{,}986.45 \\ 312.45 \\ +\ 1{,}000.98 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 4{,}987.23 \\ 4{,}980.47 \\ 10{,}234.94 \\ +\ 9{,}872.54 \\ \hline \end{array}$$

19.
$$\begin{array}{r} .52802 \\ .34007 \\ .00321 \\ +\ .00009 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 15.125 \\ 4.625 \\ 20.125 \\ +\ 16.125 \\ \hline \end{array}$$

ADDING DECIMALS
UNIT III

ASSIGNMENT SHEET #2 — WRITE AND SOLVE
DECIMAL NUMBER PROBLEMS

NAME _____ SCORE _____

Write the following problems in columns and find the sums.

1. 5.01 + .0074 + 6.9 + 71 =

2. 38.03 + .52 + .064 + 9 =

3. 973.22 + .65 + .0015 + 25 =

ASSIGNMENT SHEET #2

4. $49.19 + $.78 + $5 + $15.07 =

5. 2,744 + 73.27 + .02462 + 73.69 =

6. $29.98 + $.87 + $6 + 13.02 =

7. 4.85 + .0026 + 9.5 + 56 =

ASSIGNMENT SHEET #2

8. 53.52 + .58 + .074 + 8 =

9. 314.46 + .82 + .0037 + 31 =

10. $29.63 + $.67 + $9 + $67.65 =

11. 6.86 + .0505 + 7.9 + 82 =

ASSIGNMENT SHEET #2

12. 182.44 + .074 + .0039 + 88 =

13. 57.78 + .22 + .003 + 74 =

14. $97.82 + $.39 + $6 + $451.84 =

15. $29.99 + $.59 + $129.59 + $7 =

ASSIGNMENT SHEET #2

16. 6,319 + 95.12 + .0713 + 321.07 =

17. $63.29 + $.79 + $8 + $76.56 =

18. $29.63 + $.67 + $9 + $67.65 =

19. 314.46 + .82 + .0037 + 31 =

ASSIGNMENT SHEET #2

20. $4.81 + $7.29 + $3.56 =

ADDING DECIMALS
UNIT III

ASSIGNMENT SHEET #3 — SOLVE STORY PROBLEMS

NAME _____ SCORE _____

Solve the following story problems and show your work.

1. An electrician cut the following lengths of wire from a roll: 12.375 feet, 8.875 feet, and 21.625 feet. What was the total amount of wire cut from the roll?

2. A maintenance supervisor wishes to fence a rectangular area for storage. If the area is 26.5 feet wide and 44.25 feet long, how much fence will he need?

ASSIGNMENT SHEET #3

3. The thickness of several pieces of metal were measured with a micrometer. They were found to be .035, .608, .0513, and .026 inches. What is the combined thickness of the four pieces of metal?

4. A television repairman earned the following amounts in five hours: $30.78, $41.63, $35.16, $43.17, $29.83. What were his total earnings for the day?

ASSIGNMENT SHEET #3

5. A truck driver loaded three cartons onto her truck. The weights of the cartons were: 73.8, 95.25, and 608.4 pounds. What was the weight of her load?

6. A plumber worked for one week on a construction job. The number of hours that he worked each day were: 10.75, 8.5, 9.33, 8.0, 6.25. How many hours did he work that week?

ASSIGNMENT SHEET #3

7. A cabinetmaker built a set of bookshelves. The shelves were 10.125, 10.375 and 12.5 inches apart. What was the total height of the bookshelves?

8. A surveyor, in measuring an irregular plot of land, recorded the following measurements: 175.33 feet, 210.875 feet, 89.67 feet, 145.125 feet, and 110.375 feet. What was the total distance around the plot of land?

ASSIGNMENT SHEET #3

9. What is the distance around a figure having sides of the following measurements: 6.3 feet, 6.31 feet, 9.72 feet, and 9.72 feet?

10. A triangle has the following dimensions: 12.99 feet, 10.75 feet, and 12.99 feet. What is the perimeter or the distance around the triangle?

ASSIGNMENT SHEET #3

11. Bonnie spent $6.45 for stockings, $33.98 for shoes, and $7.95 for gloves. How much did she spend in all?

12. A meter shows that 782.35 gallons of water have been used. What will the meter show after 38.715 more gallons have been used?

ASSIGNMENT SHEET #3

13. Mary bought a suit for $79.75, a hat for $16.95, and shoes for $38.88. What was her total bill?

14. On a trip Bobby drove 325.2 miles one day, 419.7 miles the next, and 366.4 miles the third. How many miles did she drive in all?

ASSIGNMENT SHEET #3

15. Snowfall in New York City was 8.3 inches in December, 9.0 inches in January, 9.2 inches in February, and 10.5 inches in March. What was the total snowfall for the four months?

16. Dorothy's dress cost $120.95, her gloves $10.97, and her hat $14.99. What did her whole outfit cost?

ASSIGNMENT SHEET #3

17. Mrs. Martinez bought shoes for each of her four children. She was charged $25.71, $15.32, $26.75, and $27.95 for the shoes. What was her total bill?

18. A tourist went into a souvenir shop and bought a vase for $9, some jewelry for $13.79, a fancy blouse for $26.23, and a pennant for $1.35. How much did he spend?

ASSIGNMENT SHEET #3

19. A couple bought a house. In addition to the down payment of $3,800, they had to pay fees and other expenses of $2,900. How much total cash did they need to make the purchase?

20. A teenage girl was allowed $9.00 for her budget for the week. She spent $4.78 for school books, $2.50 for lunches, and $1.07 for extras. Did she stay within the budget she was allowed? How much did she spend?

ADDING DECIMALS
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. .189
2. 1.072
3. 9.22
4. .0102
5. 5.99
6. 4.508
7. 71.01
8. 13.132
9. 9.4
10. 287.706
11. 73.2
12. .4000
13. 29.26
14. 6.455
15. 19.29
16. 180.99
17. 3,299.88
18. 30,075.18
19. .87139
20. 56.000

Assignment Sheet #2

1. 82.9174
2. 47.614
3. 998.8715
4. $70.04
5. 2,890.98462
6. $49.87
7. 70.3526
8. 62.174
9. 346.2837
10. $106.95
11. 96.8105
12. 270.5179
13. 132.003
14. $556.05
15. $167.17
16. 6,735.2613
17. $148.64
18. $106.95
19. 346.2837
20. $15.66

Assignment Sheet #3

1. 42.875 feet
2. 141.50 feet
3. .7203 inches
4. $180.57
5. 77.45 pounds
6. 42.83 hours
7. 33 inches
8. 731.375 feet
9. 32.05 feet
10. 36.73 feet
11. $48.38
12. 821.065 gallons
13. $135.58
14. 1,111.3 miles
15. 37 inches
16. $146.91
17. $95.73
18. $50.37
19. $6,700
20. Yes, $8.35

ADDING DECIMALS
UNIT III

TEST

NAME _____ SCORE _____

1. Solve the following problems by writing them in columns and adding.

   a. 3.5 + 5.1 + 7 =

   b. 3.4 + 0.206 + 1.74 =

   c. 6.86 + .0505 + 7.9 + 82 =

   d. 57.78 + .22 + .003 + 74 =

TEST

e. 6,319 + 95.12 + .0713 + 321.07 =

f. $29.99 + $.59 + $129.59 + $7 =

g. 5.15 + .0686 + 9.7 + 28 =

h. 13.96 + 1.295 + 1,743 + .12307 =

TEST

2. Solve the following story problems. Show your work.

   a. A machinist cut a piece of steel 2.7 inches long, a second piece 11.5 inches long, and a third piece 4.3 inches long. How much did she cut altogether?

   b. A piece of steel was cut 6.035 inches long. The scrap piece and the waste from cutting was 1.19 inches. How long was the steel piece before it was cut?

ADDING DECIMALS
UNIT III

ANSWERS TO TEST

1. a. 15.6
   b. 5.346
   c. 96.8105
   d. 132.003
   e. 6,735.2613
   f. $167.17
   g. 42.9186
   h. 1,758.37807

2. a. 18.5 inches
   b. 7.225 inches

SUBTRACTING DECIMALS
UNIT IV

UNIT OBJECTIVE

After completing this unit, the student should be able to write decimals in the proper form for subtraction, locate the decimal point in the answer, check the answer by addition and solve applied story problems. This ability will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match terms associated with subtracting decimals to their correct definitions.
2. Solve and check problems involving subtraction of decimals.
3. Solve applied story problems involving subtraction of decimals.

SUBTRACTING DECIMALS
UNIT IV

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Pretest
- D. Answers to pretest
- E. Information sheet
- F. Assignment sheets
  1. Assignment Sheet #1 — Write and Solve Subtraction Problems
  2. Assignment Sheet #2 — Solve Story Problems
- G. Answers to assignment sheets
- H. Test
- I. Answers to test

II. Instructor's guide

- A. Order (or obtain) materials to supplement unit.
- B. Give pretest.
- C. Critique pretest and go over results in class.

  (NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)
- D. Provide students with copies of unit.
- E. Discuss unit and specific objectives.
- F. Discuss information and assignment sheets.
  1. Discuss terms and definitions related to subtracting decimals; use Information Sheet, Section I.
  2. Explain how to subtract and check problems containing decimal numerals; use Information Sheet, Section II.
     - Demonstrate the process of subtracting by putting exmaples on the chalkboard; have students take notes.

SUGGESTED ACTIVITIES

- Have students complete Assignment Sheet #1.
- Go over answers in class; have some students put their answers on the chalkboard so students can see the format used to set up the problems.

3. Explain how to solve story problems involving subtracting decimal numerals.
   - Put several examples of story problems on the chalkboard; have students take notes.
   - Give the students some sample problems to practice, then go over answers.
   - Have students complete Assignment Sheet #2.
   - Go over answers in class.

G. Give test.

H. Critique test and discuss in class.

I. Reteach and retest as necessary.

III. Unit reference — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

SUBTRACTING DECIMALS
UNIT IV

PRETEST

NAME _____ SCORE _____

1. Match the following terms related to subtracting decimals to their definitions. Write the correct numbers in the blanks.

_____a. The number from which another number is subtracted	1. Decimal point
_____b. The number that is subtracted from another number	2. Minuend
_____c. The answer to a subtraction problem	3. Difference
_____d. Divides whole numbers from fractional parts of numbers	4. Subtrahend

2. Solve and check the following subtraction problems. Show your work.

   a. 6.425 – 3.028 =

   b. 9.63 – 4.923 =

   c. .0423 – .0062 =

PRETEST

d. 1 – .0067 =

e. $42.65 – $13.48 =

3. Solve the following applied story problems.

a. A farmer loaded his farm wagon with 1,000 pounds of cotton. When he reached the cotton gin, he had only 946.34 pounds of cotton. How much cotton did he lose on the trip?

b. Last month Mike's consulting firm took in $4,732.43. He paid $67.42 to the telephone company, $2,123.44 to his employees, and $295.00 for rent. How much profit did Mike make?

SUBTRACTING DECIMALS
UNIT IV

ANSWERS TO PRETEST

1. a. 2
   b. 4
   c. 3
   d. 1

2. a. 3.397
   b. 4.707
   c. .0361
   d. .9933
   e. $29.17

3. a. 53.66 pounds
   b. $2246.57

SUBTRACTING DECIMALS
UNIT IV

INFORMATION SHEET

I. Terms and definitions

A. Minuend — The number from which another number is subtracted

B. Subtrahend — The number that is subtracted from another number

C. Difference — The answer to a subtraction problem

(NOTE: Another word for difference is *remainder*.)

D. Decimal point — Divides whole numbers from fractional parts of numbers

(NOTE: All digits to the left of the decimal point represent whole numbers; all digits to the right of the decimal point represent fractional parts of numbers.)

II. Subtracting decimals

A. Write minuend and subtrahend so that the decimal points are under each other

(NOTE: Write a decimal point after any whole numbers and fill in with zeros to make equal columns.)

EXAMPLE:
$$\begin{array}{r} 29.00 \\ -\ 3.21 \\ \hline \end{array}$$

B. Subtract each column of numbers the same as for regular whole numbers

C. Locate the decimal point in the answer (difference) by placing it under the above decimal points

D. Check subtraction

1. Add the difference and the subtrahend

2. Compare the sum to the minuend; if they are the same, the difference is correct

EXAMPLE:
$$\begin{array}{r} 8.120 \\ -\ 1.397 \\ \hline 6.723 \end{array} \qquad \begin{array}{r} \text{(Check)} \\ 1.397 \\ +\ 6.723 \\ \hline 8.120 \end{array}$$

INFORMATION SHEET

III. Solving story problems

A. Read the problem

B. Determine the minuend and subtrahend

C. Write and solve the numerical problem

D. State answer in kind of thing requested

EXAMPLE: Feet, dollars

SUBTRACTING DECIMALS
UNIT IV

ASSIGNMENT SHEET #1 — WRITE AND SOLVE SUBTRACTION PROBLEMS

NAME _____ SCORE _____

Write the following problems in correct form, subtract and check your work.

1. 868.87 - 516.89 =

2. 567 - 19.856 =

3. 198 - 56.987 =

ASSIGNMENT SHEET #1

4. 567.94 – 59.78 =

5. $815.23 – $65.98 =

6. $20.03 – $15.88 =

7. 694.7 – 24.3 =

ASSIGNMENT SHEET #1

8. 5,000 – 892.66 =

9. $15 – $12.53 =

10. 219.3 – .085 =

11. 16.78 – 5.99 =

ASSIGNMENT SHEET #1

12. .9453 – .765 =

13. 2.345 – 1.6 =

14. .13 – .023 =

15. .00754 – .00093 =

ASSIGNMENT SHEET #1

16. 20.32 - .84 =

17. 930. - 17.45 =

18. .034 - .034 =

19. 1. - .9999 =

ASSIGNMENT SHEET #1

20. 7.777 - .777 =

SUBTRACTING DECIMALS
UNIT IV

ASSIGNMENT SHEET #2 — SOLVE STORY PROBLEMS

NAME _____ SCORE _____

Solve the following story problems. Show your work. Check your answers.

1. Two sheets of metal were measured with a micrometer. One was found to be .093 inch thick and the other was .133 inch thick. What is the difference in the thickness of the two sheets of metal?

2. A plumber cut 2.875 inches off the end of a piece of pipe. The piece of pipe was 36.125 inches long. What is the length of the remaining pipe?

3. A cut of .035 inch was milled from a metal block 3.875 inches thick. What is the new thickness of the block?

ASSIGNMENT SHEET #2

4. A carpenter's bill for lumber totaled $125.57. She was given a discount of of $12.57. How much did she pay for the lumber?

5. A machine is used to cut circular disks from sheet metal. If 575 pounds of sheet metal is necessary to make 454.25 pounds of disks, how much of the metal is waste?

6. A truck driver loaded 10,000 pounds of sand on his truck. When he weighed in at his destination he had only 9,874.75 pounds of sand. How much sand did he lose on the trip?

7. A length of steel was cut from a piece 7.225 inches long. The piece cut off, including the waste from cutting, was 1.19 inches. How long was the remaining piece?

ASSIGNMENT SHEET #2

8. A man earned $18,397.58 in one year. He paid $6,272.27 in income taxes. How much did he have left?

9. How much change will Jack get from $20 if he spends $4.98 for a shirt and $11.42 for records?

10. After a trip of 685.7 miles, the odometer in Mrs. Rose's car read 16,295.3. What did the odometer read before the trip?

SUBTRACTING DECIMALS
UNIT IV

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. 351.98
2. 547.144
3. 141.013
4. 508.16
5. $749.25
6. $4.15
7. 670.4
8. 4107.34
9. $2.47
10. 219.215
11. 10.79
12. .1803
13. .745
14. .107
15. .00661
16. 19.48
17. 912.55
18. 0
19. .0001
20. 7.000

Assignment Sheet #2

1. .040 inch
2. 33.250 inches
3. 3.840 inches
4. $113.00
5. 120.75 pounds
6. 125.25 pounds
7. 6.035 inches
8. $12,125.31
9. $3.60
10. 15,609.6 miles

SUBTRACTING DECIMALS
UNIT IV

TEST

NAME _____ SCORE _____

1. Match the following terms associated with subtracting decimals to their definitions. Write the correct numbers in the blanks.

_____a. The number that is subtracted from another number	1. Difference
_____b. Divides whole numbers from fractional parts of numbers	2. Minuend
_____c. The answer to a subtraction problem	3. Subtrahend
_____d. The number from which another number is subtracted	4. Decimal point

2. Solve and check the following subtraction problems. Show your work.

   a. 7.205 – 3.419 =

   b. 6.801 – 3.743 =

   c. 0.609375 – 0.359375 =

TEST

d. 0.765625 – 0.25 =

e. 7.38 – 0.063 =

f. .13 – .023 =

g. 1 – 0.9999 =

h. 7.777 – 0.777 =

TEST

3. Solve the following applied story problems. Show your work and check your answers.

   a. A truck driver loaded 10,000 pounds of sand on this truck. When he weighed in at his destination he had only 8,874.75 pounds of sand. How much sand did he lose on his trip?

   b. A business took in $23,511.21 one month. It paid $11,522.15 in wages; $2,000 for rent; and $6,571.19 for expenses. How much profit remained?

SUBTRACTING DECIMALS
UNIT IV

ANSWERS TO TEST

1. a. 3
   b. 4
   c. 1
   d. 2

2. a. 3.786
   b. 3.058
   c. 0.250000
   d. 0.515625
   e. 7.317
   f. 0.107
   g. 0.0001
   h. 7.000

3. a. 1,125.25 pounds
   b. $3,417.87

MULTIPLYING DECIMALS
UNIT V

UNIT OBJECTIVE

After completing this unit, the student should be able to multiply decimal numbers correctly locating the decimal point in the product, and solve applied story problems. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Define terms related to multiplication of decimals.
2. Multiply and locate the decimal point in stated problems.
3. Solve problems using 10, 100, or 1,000 as a multiplier.
4. Solve story problems involving multiplication of decimals.

MULTIPLYING DECIMALS
UNIT V

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Pretest

D. Answers to pretest

E. Information sheet

F. Assignment sheets

1. Assignment Sheet #1 — Locate Decimal Points

2. Assignment Sheet #2 — Multiply Decimals

3. Assignment Sheet #3 — Multiply Decimals by 10, 100, or 1,000

4. Assignment Sheet #4 — Solve Story Problems

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Order (or obtain) materials to supplement unit.

B. Give pretest.

C. Critique pretest and go over results in class.

(NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)

D. Provide students with copies of unit.

E. Discuss unit and specific objectives.

F. Discuss information and assignment sheets.

1. Discuss terms and definitions related to multiplication of decimals; use Information Sheet, Section I.

SUGGESTED ACTIVITIES

2. Explain how to multiply decimal numerals using Information Sheet, Section II.
   - Work through examples on the chalkboard with students taking notes.
   - Have students complete Assignment Sheet #1.
   - Go over answers in class.
   - Have students complete Assignment Sheet #2.
   - Go over answers in class.
3. Explain multiplying by 10, 100, or 1,000; use Information Sheet, Section III.
   - Work through several examples on the chalkboard with students taking notes.
   - Have students complete Assignment Sheet #3.
   - Go over answers in class.
4. Discuss how to solve story problems that involve multiplying decimal numerals; use Information Sheet, Section IV.
   - Work through several examples on the chalkboard with students taking notes.
   - Give the students some sample problems to work. Have students put their solutions on the chalkboard.
   - Have students complete Assignment Sheet #4.
   - Go over answers in class.

G. Give test.

H. Critique test and discuss in class.

I. Reteach and retest as necessary.

III. Unit reference — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

SUBTRACTING DECIMALS
UNIT IV

PRETEST

NAME _____ SCORE _____

1. Define the following terms.

   a. Multiplier — _____

   _____

   b. Multiplicand — _____

   _____

   c. Product — _____

   _____

   d. Decimal point — _____

   _____

2. a. Locate the decimal point in each of the following problems.

   1) 4.6 × 7.3 = 3358

   2) .39 × .66 = 02574

   3) .213 × .03 = 000639

   b. Solve the following multiplication problems.

   1) 18 × .3

   2) 82.72 × 7.432

PRETEST

3) $14 \times 2.13 =$

4) $6.4 \times 8.5 =$

3. Solve the following three problems using 10, 100, or 1,000 as a multiplier.

   a. $4.23 \times 100 =$

   b. $.0446 \times 1{,}000 =$

   c. $32.8 \times 10 =$

4. Solve the following story problems.

   a. What is the total cost of 12 boxes of fruit at $14.95 each?

   b. What is the total cost of a 120 square foot barn at $15.60 per square foot?

MULTIPLYING DECIMALS
UNIT V

ANSWERS TO PRETEST

1. a. Number that does the multiplying
   b. Number that is multiplied
   c. Answer or result of multiplication
   d. Divides whole numbers from fractional parts of numbers

2. a. 1) 33.58
      2) 0.2574
      3) 0.00639
   b. 1) 5.4
      2) 614.77504
      3) 29.82
      4) 54.4

3. a. 423
   b. 44.6
   c. 328

4. a. $179.40
   b. $1,872.00

MULTIPLYING DECIMALS
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. Multiplier — Number that does the multiplying

B. Multiplicand — Number that is multiplied

C. Product — Answer or result of multiplication

D. Decimal point — Divides whole numbers from fractional parts of numbers

(NOTE: Digits to the left of the decimal point represent whole numbers; digits to the right of the decimal point represent fractional parts of numbers.)

II. Multiplying decimals

A. Write the multiplier beneath the multiplicand

(NOTE: In writing multiplication problems, the decimal points do not have to be aligned.)

B. Multiply the same as with the whole numbers

C. Locate the decimal point

1. Add the number of decimal places to the right of the decimal point in the multiplicand and the multiplier

2. Count from the right the number of places found in step 1 and write in the decimal point, adding zeros as place holders as necessary

EXAMPLE:

27.935	(3 places)
× 7.7	(1 place)
215.0995	(4 places)

III. Multiplying by 10, 100, or 1,000 — Move the decimal point one place to the right for each zero in the multiplier; add zeros for place holders when necessary

EXAMPLES: 1.45 × 10 = 14.5
1.45 × 100 = 145
1.45 × 1,000 = 1450

IV. Solving story problems

A. Read the problem

INFORMATION SHEET

B. Decide on the procedures necessary to solve the problem

C. Write and solve the numerical problem

MULTIPLYING DECIMALS
UNIT V

ASSIGNMENT SHEET #1 — LOCATE DECIMAL POINTS

NAME _____ SCORE _____

1. Show how the decimal point was located in each of the following multiplication problems.

   EXAMPLE: 4.2 × .03 = .126 1 + 2 = 3 places

   a. 14.7 × 0.13 = 1.911 _____

   b. 0.07 × 0.004 = 0.00028 _____

   c. 2.5 × 7.5 = 18.75 _____

   d. 0.002 × 15.4 = 0.0308 _____

   e. 15 × 1.5 = 22.5 _____

   f. 0.008 × 0.9 = .0072 _____

2. Correctly place the decimal points in the following products. Add zeros for place holders when needed.

   a. 224 × 2.4 = 5376

   b. 2.24 × 0.024 = 5376

   c. 0.688 × 0.45 = 30960

   d. 6.88 × 0.45 = 30960

   e. 3.61 × 5.7 = 20577

   f. 36.1 × 5.7 = 20577

   g. 22.4 × 0.24 = 5376

   h. 0.0224 × 0.24 = 5376

   i. 68.8 × 0.45 = 30960

   j. 6.88 × 4.5 = 30960

   k. 0.361 × 5.7 = 20577

   l. 0.361 × 0.057 = 20577

MULTIPLYING DECIMALS
UNIT V

ASSIGNMENT SHEET #2 — MULTIPLY DECIMALS

NAME _____ SCORE _____

Rewrite and multiply the following problems. Locate the decimal point in the product.

1. 2.64 × 3.1 =

2. 120 × .33 =

3. 2.25 × .51 =

4. 35 × 8.5 =

ASSIGNMENT SHEET #2

5. 26.4 × 3.8 =

6. 7.02 × .92 =

7. .83 × .55 =

8. 28.2 × .9 =

9. .069 × .01 =

ASSIGNMENT SHEET #2

10. 7.52 × 3.01 =

11. 32.1 × 29.9 =

12. .168 × 12 =

13. 78 × 9.1 =

14. 69.3 × .75 =

ASSIGNMENT SHEET #2

15. .043 × 2.4 =

16. 574 × .34 =

17. 10.52 × .54 =

18. 9.06 × 4.3 =

19. 21.6 × .3 =

ASSIGNMENT SHEET #2

20. 60.1 × 8.2 =

MULTIPLYING DECIMALS
UNIT V

ASSIGNMENT SHEET #3 — MULTIPLY DECIMALS BY 10, 100, OR 1,000

NAME _____ SCORE _____

Solve the following multiplication problems.

1.	287	2.	0.351	3.	.03099	4.	4.45	5.	648
	× 100		× 10		× 100		× 1000		× 10
6.	.3967	7.	37.8	8.	64	9.	.3684	10.	.0064
	× 100		× 100		× 1000		× 10		× 10

11. 69.239 × 100 =
12. 5.766 × 10,000 =
13. 2,801 × 10 =
14. 8.16 × 100 =
15. 8.108 × 100 =
16. .892 × 10 =
17. 6.69 × 1,000 =
18. 47.3 × 100 =
19. .0957 × 100 =
20. 61.75 × 10 =

MULTIPLYING DECIMALS
UNIT V

ASSIGNMENT SHEET #4 — SOLVE STORY PROBLEMS

NAME _____ SCORE _____

Solve the following story problems. Show your work.

1. The area of a rectangle is found by multiplying its length times its width. What is the area of a rectangular piece of sheet metal 16.4 inches long and 12.16 inches wide?

2. A carpenter used 7.75 sheets of interior plywood on the job. If the plywood cost $26.42 per sheet, what was the cost of the plywood used on the job?

3. Find the cost of this purchase: 8 pictures at $2.10 apiece, 25 feet of framing at $.85 a foot, and 12 square feet of masonite at $.25 a square foot.

ASSIGNMENT SHEET #4

4. The builder purchased 20 square yards of carpeting at $14.95 a square yard, 18 square yards of padding at $2.40 a square yard, and 6 feet of metal stripping at $.85 a foot. What was the total bill?

5. If you purchased 3 quarts of oil at $1.36 a quart and 8 gallons of gasoline at 99.9 cents a gallon, what would the total bill be?

6. At $3.48 per foot, what is the cost of 24.5 feet of steel tubing?

ASSIGNMENT SHEET #4

7. Mrs. John purchased 17 books at $7.98 each. How much did the books cost?

8. What is the cost of 5 pounds of nails at 52 cents a pound and 6 pieces of lumber at 99 cent per piece?

9. Mary used 3 buckets of paint in painting the porches. How much did the paint cost at $9.95 per bucket?

ASSIGNMENT SHEET #4

10. Six new books were added to the library. What was the cost if books were selling for $11.95 each?

MULTIPLYING DECIMALS
UNIT V

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. a. 1 + 2 = 3
   b. 2 + 3 = 5
   c. 1 + 1 = 2
   d. 3 + 1 = 4
   e. 0 + 1 = 1
   f. 3 + 1 = 4

2. a. 537.6
   b. .05376
   c. .30960
   d. 3.0960
   e. 20.577
   f. 205.77
   g. 5.376
   h. .005376
   i. 30.960
   j. 30.960
   k. 2.0577
   l. .020577

Assignment Sheet #2

1. 8.184
2. 39.60
3. 1.1475
4. 297.5
5. 100.32
6. 6.4584
7. .4565
8. 25.38
9. .00069
10. 22.6352
11. 959.79
12. 2.016
13. 709.8
14. 51.975
15. .1032
16. 195.16
17. 5.6808
18. 38.958
19. 6.48
20. 492.82

Assignment Sheet #3

1. 28,700
2. 3.51
3. 3.099
4. 4,450
5. 6,480
6. 39.67
7. 3,780
8. 64,000
9. 3.684
10. .064
11. 6,923.9
12. 57,660
13. 28,010
14. 816
15. 810.8
16. 8.92
17. 6,690
18. 4,730
19. 9.57
20. 617.5

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

1. 199.424 square inches
2. $204.76
3. $41.05
4. $347.30
5. $12.07
6. $85.26
7. $135.66
8. $8.54
9. $29.85
10. $71.70

MULTIPLYING DECIMALS
UNIT V

TEST

NAME _____ SCORE _____

1. Define the following terms.

   a. Multiplier — _____

   _____

   b. Multiplicand — _____

   _____

   c. Product — _____

   _____

   d. Decimal point — _____

   _____

2. a. Locate the decimal point in each of the following problems.

      1) 2.6 × 4.7 = 1222

      2) 936 × .06 = 5616

      3) 8.03 × 9.2 = 73876

      4) .119 × .05 = 595

      5) .39 × .25 = 975

   b. Solve the following problems.

      1) 9 × .8 =

TEST

2) 1.3 x 98 =

3) 92.07 x 7.392 =

4) 16 x 1.5 =

5) 9.5 x .76 =

3. Solve the following problems using 10, 100, 1,000 as a multiplier.

   a. 8.76 x 100 =

   b. .0816 x 1000 =

   c. 68.4 x 10 =

TEST

4. Solve the following story problems. Show your work.

   a. What is the total cost of 8 tires at $25.95 each?

   b. What is the total cost of 44 square yards of carpet at $9.95 a square yard?

MULTIPLYING DECIMALS
UNIT V

ANSWERS TO TEST

1. a. Number that does the multiplying
   b. Number that is multiplied
   c. Answer or result of multiplication
   d. Divides whole numbers from fractional parts of numbers

2. a. 1) 12.22
      2) 56.16
      3) 73.876
      4) .00595
      5) .0975
   b. 1) 7.2
      2) 127.4
      3) 680.58144
      4) 24.0
      5) 7.22

3. a. 876
   b. 81.6
   c. 684

4. a. $207.60
   b. $437.80

DIVIDING DECIMALS
UNIT VI

UNIT OBJECTIVE

After completing this unit, the student should be able to divide decimals and whole numbers, check their answers by multiplication, and solve story problems that require division of decimals. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Divide decimals by whole numbers.
2. Divide decimals by decimals.
3. Divide whole numbers by decimals.
4. Divide whole numbers when the divisor is a larger number than the dividend.
5. Solve story problems that require division of decimals.

DIVIDING DECIMALS
UNIT VI

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Pretest

D. Answers to pretest

E. Information sheet

F. Assignment sheets

1. Assignment Sheet #1 — Divide Decimals by Whole Numbers
2. Assignment Sheet #2 — Divide Decimals by Decimals
3. Assignment Sheet #3 — Divide Whole Numbers by Decimals
4. Assignment Sheet #4 — Divide Whole Numbers
5. Assignment Sheet #5 — Solve Story Problems

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Order (or obtain) materials to supplement unit.

B. Give pretest.

C. Critique pretest and go over results in class.

(NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)

D. Discuss unit and specific objectives.

SUGGESTED ACTIVITIES

E. Discuss information and assignment sheets.

1. Explain how to divide a decimal numeral by a whole number and to check the answer using Information Sheet, Section I.

   - Demonstrate the process by working through problems on the chalkboard, and have students take notes.
   - Give the students some sample problems to work; go over problems in class.
   - Have students complete Assignment Sheet #1.
   - Go over the answers in class.

2. Discuss how to divide a decimal numeral by another decimal numeral and check the answer using Information Sheet, Section II.

   - Demonstrate the process by working through problems on the chalkboard, and have students take notes.
   - Give the students some sample problems to work; go over problems in class.
   - Have students complete Assignment Sheet #2.
   - Go over the answers in class.

3. Demonstrate how to divide a whole number by a decimal and check the answer using Information Sheet, Section III.

   - Demonstrate the process by working through problems on the chalkboard, and have students take notes.
   - Give the students some sample problems to work; go over problems in class.
   - Have students complete Assignment Sheet #3.
   - Go over the answers in class.

4. Explain how to divide whole numbers when the divisor is a larger number than the dividend; use Information Sheet, Section IV.

   - Demonstrate the process by working through problems on the chalkboard, and have students take notes.

SUGGESTED ACTIVITIES

- Give the students some sample problems to work; go over problems in class.
- Have students complete Assignment Sheet #4.
- Go over the answers in class.

5. Explain how to solve story problems that involve dividing decimal numerals; use Information Sheet, Section V.
   - Demonstrate the process by working through problems on the chalkboard, and have students take notes.
   - Give the students some sample problems to work; go over problems in class.
   - Have students complete Assignment Sheet #5.
   - Go over the answers in class.

F. Give test.

G. Critique test and discuss in class.

H. Reteach and retest as necessary.

III. Unit reference — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

DIVIDING DECIMALS
UNIT VI

PRETEST

NAME _____ SCORE _____

1. Solve and check these problems dividing decimals by whole numbers.

   a. $4\overline{).328}$ b. .1812 ÷ 6 = c. $5\overline{).0510}$

2. Solve and check these problems dividing decimals by decimals.

   a. .2424 ÷ .6 = b. 83.5 ÷1.1 = c. $\frac{.75}{.15}$ =

3. Solve and check these problems dividing whole numbers by decimals.

   a. $\frac{36}{.4}$ = b. 63 ÷ .07 = c. 88 ÷ .012 =

4. Solve and check these problems dividing whole numbers when the divisor is larger than the dividend.

   a. 6 ÷ 7 = b. $\frac{46}{68}$ = c. 37 ÷ 63 =

PRETEST

5. Solve and check these story problems. Show your work.

   a. A typesetter worked six hours and made $83.28. What did she make per hour?

   b. A farmer divided 6.24 acres into 5 lots of equal size. How big was each lot?

   c. Jan, Tom, and Don are planning a party. They figure the cost of refreshments to be $26.34. How much will each pay if they divide the cost equally?

DIVIDING DECIMALS
UNIT VI

ANSWERS TO PRETEST

1. a. 0.082
   b. .0302
   c. .0102

2. a. .404
   b. 75.90909
   c. 5

3. a. 90
   b. 900
   c. 7333.333

4. a. .857
   b. .6765
   c. .5873

5. a. $13.88
   b. 1.248 acres
   c. $8.78

DIVIDING DECIMALS
UNIT VI

INFORMATION SHEET

I. Dividing a decimal by a whole number

A. Place the decimal point in the quotient directly above its location in the dividend

B. Divide as with whole numbers

C. Check by multiplying the divisor and the quotient

(NOTE: The result should be the dividend. If there is a remainder, it will have to be added to the product.)

EXAMPLES: $5\overline{)1.75}$ $\quad .35$

Check
$$\begin{array}{r} .35 \\ \times \quad 5 \\ \hline 1.75 \end{array}$$

$5\overline{).0125}$ $\quad .0025$

Check
$$\begin{array}{r} .0025 \\ \times \quad 5 \\ \hline .0125 \end{array}$$

II. Dividing a decimal by a decimal

A. Count the number of digits to the right of the decimal point in the divisor

B. Place a caret ∧ at the end of the number

C. Count as many digits to the right of the decimal point in the dividend as you counted in the divisor

D. Place a caret ∧ after the last digit you count

(NOTE: You may need to place some zeros in the dividend to the right of the last digit.)

E. Place the decimal point in the quotient directly above the caret in the dividend

F. Divide as with whole numbers

INFORMATION SHEET

G. Check by multiplying the quotient and the divisor

EXAMPLES: $.5\overline{).25}$ (.5 ∧ .25 ∧) $\quad .5$

Check $\quad .5 \times .5 = .25$

$.05\overline{).25}$ (.05 ∧ .25 ∧) $\quad 5.$

Check $\quad .05 \times 5 = .25$

$.005\overline{).25}$ becomes $.005\overline{).250}$ (.005 ∧ .250 ∧) $\quad 50.$

Check $\quad .005 \times 50 = .250$

III. Dividing a whole number by a decimal

A. Place a decimal point in the dividend at the right side of the number

B. Count the number of digits to the right of the decimal point in the divisor

C. Place a caret ∧ at the end of the number

D. Write as many zeros after the decimal point in the dividend as you counted places in the divisor

E. Place a caret ∧ after the last zero

F. Place a decimal piont in the quotient directly above the caret in the dividend

G. Divide as with whole numbers

(NOTE: Zeros may need to be added beyond the caret if the division does not come out even.)

H. Check by multiplying the divisor and quotient

EXAMPLE: $.03\overline{)9}$ becomes $.03\overline{)9.00}$ (.03 ∧ 9.00 ∧) $\quad 300.$

Check $\quad 300 \times .03 = 9.00$

IV. Dividing whole numbers when the divisor is a larger number than the dividend

A. Place a decimal point behind the number in the dividend

INFORMATION SHEET

B. Place a decimal point in the quotient directly above the decimal point in the dividend

C. Write zeros behind the decimal point in the dividend as needed

D. Divide as with whole numbers

E. Check by multiplying the quotient and divisor

EXAMPLES: 3/4

$$4\overline{)3.00} = .75$$

28
20
20

Check

$$\begin{array}{r} .75 \\ \times \quad 4 \\ \hline 3.00 \end{array}$$

4/32

$$32\overline{)4.000} = .125$$

32
80
64
160
160

Check

$$\begin{array}{r} .125 \\ \times \quad 32 \\ \hline 250 \\ 375 \\ \hline 4.000 \end{array}$$

V. Solving story problems

A. Read the problem

B. Decide on the procedures necessary to solve the problem

C. Write and solve the numerical problem

DIVIDING DECIMALS
UNIT VI

ASSIGNMENT SHEET #1 — DIVIDE DECIMALS BY WHOLE NUMBERS

NAME _____ SCORE _____

Solve the following problems. Show your work. Check your answers.

1. $5\overline{)5.85}$
2. $4\overline{).8}$
3. $2\overline{).38}$
4. $12\overline{)8.16}$
5. $41\overline{)32.39}$
6. $63\overline{)1.764}$
7. $51\overline{)9.18}$
8. $81\overline{).3078}$
9. $44\overline{)13.376}$

ASSIGNMENT SHEET #1

10. $19\overline{).665}$

11. $62\overline{)96.72}$

12. $47\overline{)3.948}$

13. $125\overline{)212.5}$

14. $26\overline{)16.484}$

15. $94\overline{)2368.8}$

DIVIDING DECIMALS
UNIT VI

ASSIGNMENT SHEET #2 — DIVIDE DECIMALS BY DECIMALS

NAME _____ SCORE _____

Solve the following problems. Show your work. Check your answers.

1. $.5\overline{)4.5}$

2. $.4\overline{)4.96}$

3. 19.8 ÷ .6 = _____

4. 10.74 ÷ .07 = _____

5. .225 ÷ .15 = _____

ASSIGNMENT SHEET #2

6. 1.7608 ÷ .0062 = _____

7. .48 ÷ .6 = _____

8. .125 ÷ .25 = _____

9. .9 ÷ .003 = _____

10. 1.16 ÷ 2.9 = _____

11. .65 ÷ .025 = _____

ASSIGNMENT SHEET #2

12. 4.22 ÷ .04 = _____

13. 1.14 ÷ .06 = _____

14. .996 ÷ .4 = _____

15. 5.4 ÷ .09 = _____

DIVIDING DECIMALS
UNIT VI

ASSIGNMENT SHEET #3 — DIVIDE WHOLE NUMBERS BY DECIMALS

NAME _____ SCORE _____

Solve the following problems. Show your work. Check your answers.

1. $.3\overline{)75}$

2. 108 ÷ .09 = _____

3. 84 ÷ .007 = _____

4. 459 ÷ 2.7 = _____

5. 64 ÷ .16 = _____

ASSIGNMENT SHEET #3

6. 125 ÷ .25 = _____

7. 34 ÷ 8.5 = _____

8. 6 ÷ .12 = _____

9. 406 ÷ .029 = _____

10. 8433 ÷ .09 = _____

DIVIDING DECIMALS
UNIT VI

ASSIGNMENT SHEET #4 — DIVIDE WHOLE NUMBERS

NAME _____ SCORE _____

Solve the following division problems. Show your work. Check your answers.

1. 1/2 = _____
2. 3/4 = _____
3. 5/8 = _____
4. 16/32 = _____
5. 8/16 = _____
6. 1/4 = _____
7. 3/8 = _____
8. 7/8 = _____
9. 9/16 = _____
10. 11/16 = _____
11. 13/16 = _____
12. 4/16 = _____

ASSIGNMENT SHEET #4

13. 12/16 = _____

14. 8/32 = _____

15. 24/32 = _____

16. 2/8 = _____

17. 10/16 = _____

18. 14/16 = _____

19. 28/32 = _____

20. 20/32 = _____

DIVIDING DECIMALS
UNIT VI

ASSIGNMENT SHEET #5 — SOLVE STORY PROBLEMS

NAME _____ SCORE _____

1. Mrs. Lockman bought 12 square yards of carpeting for $179.40. What was the price per square yard?

2. Jay Brown spent $13.65 on 13 gallons of gasoline. What was the price per gallon?

3. A 78 foot cable is to be marked at intervals of 3.25 feet for testing. Into how many such intervals will the cable be divided?

4. Dean and his father went to buy a small truckload of watermelons. The melons were priced at $.90 each. How many melons could they buy for $30.60?

5. Gary feeds his pets 3 pounds of oats a day, or 1095 pounds a year. A bushel of oats weighs 32 pounds. How many bushels of oats does Gary need for the year? (Carry answer to 3 decimal places.)

ASSIGNMENT SHEET #5

6. Carlton drove 377 miles in 6.5 hours. Find the average miles per hour he drove.

7. The shop manager has 270 inches of wire on a spool. How many yards is this?

8. If a board 6 feet 9 inches long is divided into 2 equal pieces, how long is each piece?

9. Ricky paid $10.00 for 8 spark plugs. What was the cost of each?

10. John was paid $34.20 for 9 hours of work. What was his hourly rate of pay?

DIVIDING DECIMALS
UNIT VI

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. 1.17
2. .2
3. .19
4. .68
5. .79
6. .028
7. .18
8. .0038
9. .304
10. .035
11. 1.56
12. .084
13. 1.7
14. .634
15. 25.2

Assignment Sheet #2

1. 9
2. 12.4
3. 33
4. 153.43
5. 1.5
6. 284
7. .8
8. .5
9. 300
10. .4
11. 26
12. 105.5
13. 19
14. 2.49
15. 60

Assignment Sheet #3

1. 250
2. 1200
3. 12,000
4. 170
5. 400
6. 500
7. 4
8. 50
9. 14,000
10. 93,700

Assignment Sheet #4

1. .5
2. .75
3. .625
4. .5
5. .5
6. .25
7. .375
8. .875
9. .5625
10. .6875
11. .8125
12. .25
13. .75
14. .25
15. .75
16. .25
17. .625
18. .875
19. .875
20. .625

Assignment Sheet #5

1. $14.95
2. $1.05
3. 24 intervals
4. 34 melons
5. 34.219 bushels
6. 58 miles per hour
7. 7.5 yards
8. 3 feet 4.5 inches
9. $1.25
10. $3.80

DIVIDING DECIMALS
UNIT VI

TEST

NAME _____ SCORE _____

1. Solve and check these problems dividing decimals by whole numbers.

   a. $2\overline{).486}$ b. 68.88 ÷ 24 = c. $6\overline{).5424}$

2. Solve and check these problems dividing decimals by decimals.

   a. 5.32 ÷ .4 = _____ b. 83.4 ÷ .6 = _____ c. .765 ÷ .5 = _____

   d. 75.36 ÷ .08 = _____ e. 642.6 ÷ .007 = _____

3. Solve and check these problems dividing whole numbers by decimals.

   a. 24 ÷ .2 = _____ b. 54 ÷ .09 = _____ c. 63 ÷ .007 = _____

TEST

4. Solve and check these problems dividing whole numbers when the divisor is larger than the dividend.

   a. 3/4 = _____ b. 7/16 = _____ c. 75/100 = _____

   d. 16/32 = _____ e. 48/64 = _____

5. Solve and check these story problems. Show your work.

   a. The students in Mrs. Twig's homeroom are planning a picnic. They think the total cost will be $25.50. If the 17 students in the room share the cost equally, how much will each have to pay?

   b. A machinist worked 8.5 hours and earned $84.15. What was his hourly wage?

TEST

c. A builder divided 21.6 acres of land into lots each .8 acres in area. How many lots did this make?

d. A machine made 495 cotter pins in 8.25 minutes. What is the average number of cotter pins that it can make per minute?

DIVIDING DECIMALS
UNIT VI

ANSWERS TO TEST

1. a. .243
   b. 2.87
   c. .0904

2. a. 13.3
   b. 139
   c. 1.53
   d. 942
   e. 91,800

3. a. 120
   b. 600
   c. 9,000

4. a. .75
   b. .4375
   c. .75
   d. .5
   e. .75

5. a. $1.50
   b. $9.90
   c. 27 lots
   d. 60 cotter pins

CONVERTING PERCENTS
UNIT VII

UNIT OBJECTIVE

After completing this unit, the student should be able to write fractions as decimals and percents, percents as fractions and decimals, and decimals as fractions and percents. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Write fractions as decimals and percents.
2. Write percents as fractions and decimals.
3. Write decimals as fractions and percents.

CONVERTING PERCENTS
UNIT VII

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Pretest

D. Answers to pretest

E. Information sheet

F. Assignment sheets

1. Assignment Sheet #1 — Write Fractions as Decimals and Percents

2. Assignment Sheet #2 — Write Percents as Fractions and Decimals

3. Assignment Sheet #3 — Write Decimals as Fractions and Percents

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Order (or obtain) materials to supplement unit.

B. Give pretest.

C. Critique pretest and go over results in class.

(NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)

D. Provide students with copies of unit.

E. Discuss unit and specific objectives.

F. Discuss information and assignment sheets.

SUGGESTED ACTIVITIES

1. Demonstrate how to write fractions as decimals and percents using Information Sheet, Section I.
   - Show students the process by putting examples on the chalkboard; have students take notes.
   - Give the students a few sample problems to work, and then go over them in class.
   - Have students complete Assignment Sheet #1.
   - Go over answers in class.
2. Demonstrate how to write percents as fractions and decimals using Information Sheet, Section II.
   - Show students the process by putting examples on the chalkboard; have students take notes.
   - Give the students a few sample problems to work, and then go over them in class.
3. Explain how to write decimals as fractions and percents; use Information Sheet, Section III.
   - Show students the process by putting examples on the chalkboard; have students take notes.
   - Give the students a few sample problems to work, and then go over them in class.
   - Have students complete Assignment Sheet #3.
   - Go over answers in class.

G. Give test.

H. Critique test and discuss in class.

I. Reteach and retest as necessary.

III. Unit reference — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

CONVERTING PERCENTS
UNIT VII

PRETEST

NAME _____ SCORE _____

1. Write the following fractions as decimals and percents.

   a. $\frac{1}{4}$ _____ _____

   b. $\frac{7}{8}$ _____ _____

   c. $\frac{1}{2}$ _____ _____

   d. $\frac{5}{8}$ _____ _____

   e. $\frac{2}{3}$ _____ _____

2. Write the following percents as fractions and decimals.

   a. 5% _____ _____

   b. 9% _____ _____

   c. 42% _____ _____

   d. 15% _____ _____

   e. 80% _____ _____

3. Write the following decimals as fractions and percents.

   a. .16 _____ _____

   b. .75 _____ _____

   c. 3.60 _____ _____

   d. 1.25 _____ _____

   e. 2.50 _____ _____

CONVERTING PERCENTS
UNIT VII

ANSWERS TO PRETEST

1. a. .25; 25%
   b. .875; 87.5% or $87\frac{1}{2}\%$
   c. .5; 50%
   d. .625 or .63; 63%
   e. .666; 66.6% or $66\frac{2}{3}\%$

2. a. .05; $\frac{1}{20}$
   b. .09; $\frac{9}{100}$
   c. .42; $\frac{21}{50}$
   d. .15; $\frac{3}{20}$
   e. .80; $\frac{4}{5}$

3. a. $\frac{4}{25}$; 16%
   b. $\frac{3}{4}$; 75%
   c. $3\frac{3}{5}$; 360%
   d. $1\frac{1}{4}$; 125%
   e. $2\frac{1}{2}$; 250%

CONVERTING PERCENTS
UNIT VII

INFORMATION SHEET

I. Expressing fractions as decimals and percents

A. Fractions as decimals — Divide the numerator by the denominator

EXAMPLE: $\frac{5}{8}$

$$
\begin{array}{r}
.625 \\
8\overline{)5.000} \\
\underline{48} \\
20 \\
\underline{16} \\
40 \\
\underline{40} \\
0
\end{array}
$$

B. Fractions as percents

1. Express the fraction in decimal form
2. Move the decimal point two places to the right
3. Place the % symbol after the number

EXAMPLE: $\frac{7}{33}$

$$
\begin{array}{r}
.2121 \\
33\overline{)7.000} \\
\underline{66} \\
40 \\
\underline{33} \\
70 \\
\underline{66} \\
40 \\
\underline{33} \\
7
\end{array}
\quad \times 100 = 21.21\%
$$

(NOTE: Percent means that some number is being compared to 100.)

INFORMATION SHEET

II. Expressing percents as fractions and decimals

A. Percents as fractions

1. Drop the percent symbol
2. Write the number as a fraction with denominator of 100

(NOTE: Reduce to simplest form.)

EXAMPLE: $38\% = \frac{38}{100} = \frac{19}{50}$

B. Percents as decimals

1. Drop the percent symbol
2. Move the decimal point two places to the left

EXAMPLES: $74\% = .74$

$$33\frac{1}{3}\% = .33\frac{1}{3} \text{ or } .3333$$

III. Expressing decimals as fractions and percents

A. Decimals as fractions

1. If there is one decimal place, drop the decimal point and place the number over 10

EXAMPLE: $.4 = \frac{4}{10} = \frac{2}{5}$

2. If there are two decimal places, drop the decimal point and place the number over 100

EXAMPLE: $.75 = \frac{75}{100} = \frac{3}{4}$

3. If there are three decimal places, drop the decimal point and place the number over 1000

EXAMPLE: $.375 = \frac{375}{1000} = \frac{3}{8}$

(NOTE: Do not forget to reduce to simplest form.)

INFORMATION SHEET

B. Decimals as percents

1. Move the decimal point two places to the right
2. Place the percent symbol after the number

EXAMPLES: 4 = 400%
.37 = 37%

CONVERTING PERCENTS
UNIT VII

ASSIGNMENT SHEET #1 — WRITE FRACTIONS AS DECIMALS AND PERCENTS

NAME _____ SCORE _____

1. Express each fraction as a decimal.

a. $\frac{1}{8}$

b. $\frac{1}{4}$

c. $\frac{1}{2}$

d. $\frac{3}{4}$

ASSIGNMENT SHEET #1

e. $\frac{5}{8}$

f. $\frac{7}{20}$

g. $\frac{7}{16}$

h. $\frac{1}{9}$

ASSIGNMENT SHEET #1

i. $\frac{4}{9}$

j. $\frac{4}{5}$

2. Express each fraction as a percent.

a. $\frac{1}{4}$

b. $\frac{2}{9}$

ASSIGNMENT SHEET #1

c. $\frac{7}{10}$

d. $\frac{3}{4}$

e. $\frac{2}{2}$

f. $\frac{9}{11}$

ASSIGNMENT SHEET #1

g. $\frac{1}{3}$

h. $\frac{4}{9}$

i. $\frac{2}{6}$

j. $\frac{5}{8}$

CONVERTING PERCENTS
UNIT VII

ASSIGNMENT SHEET #2 — WRITE PERCENTS AS FRACTIONS AND DECIMALS

NAME _____ SCORE _____

1. Express each percent as a fraction.

   a. 50%

   b. 25%

   c. $33\frac{1}{3}\%$

   d. 36%

ASSIGNMENT SHEET #2

e. 28%

f. $14\frac{2}{7}\%$

g. 21%

h. 45%

ASSIGNMENT SHEET #2

i. $66\frac{2}{3}\%$

j. 70%

2. Express each percent as a decimal.

   a. 47%

   b. 15%

ASSIGNMENT SHEET #2

c. 33.3%

d. 62%

e. 75%

f. 3%

ASSIGNMENT SHEET #2

g. 16.8%

h. 9%

i. 10%

j. 50%

CONVERTING PERCENTS
UNIT VII

ASSIGNMENT SHEET #3 — WRITE DECIMALS AS FRACTIONS AND PERCENTS

NAME _____ SCORE _____

1. Express each decimal as a fraction.

   a. .5

   b. .8

   c. .7

   d. .25

   e. .68

ASSIGNMENT SHEET #3

f. .55

g. .94

h. .375

i. .875

j. .212

2. Express each decimal as a percent.

a. .12

ASSIGNMENT SHEET #3

b. .19

c. .7

d. .29

e. .37

f. .42

g. .5

ASSIGNMENT SHEET #3

h. .523

i. .746

j. 3.75

CONVERTING PERCENTS
UNIT VII

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. a. .125
   b. .25
   c. .50
   d. .75
   e. .625
   f. .35
   g. .4375
   h. .1111---
   i. .444---
   j. .80

2. a. 25%
   b. 22 2/9% or 22.22%
   c. 70%
   d. 75%
   e. 100%
   f. 81.81% or 81 9/11%
   g. 33 1/3% or 33.33%
   h. 44.44% or 44 4/9%
   i. 33 1/3% or 33.33%
   j. 62 1/2% or 62.5%

Assignment Sheet #2

1. a. 1/2
   b. 1/4
   c. 1/3
   d. 9/25
   e. 7/25
   f. 1/7
   g. 21/100
   h. 9/20
   i. 2/3
   j. 7/10

2. a. .47
   b. .15
   c. .333
   d. .62
   e. .75
   f. .03
   g. .168
   h. .09
   i. .10
   j. .50

Assignment Sheet #3

1. a. 1/2
   b. 4/5
   c. 7/10
   d. 1/4
   e. 17/25
   f. 11/20
   g. 47/50
   h. 3/8
   i. 7/8
   j. 53/250

2. a. 12%
   b. 19%
   c. 70%
   d. 29%
   e. 37%
   f. 42%
   g. 50%
   h. 52.3%
   i. 74.6%
   j. 375%

CONVERTING PERCENTS
UNIT VII

TEST

NAME _____ SCORE _____

1. Write the following fractions as decimals and percents.

a. $\frac{1}{3}$ _____ _____

b. $\frac{2}{3}$ _____ _____

c. $\frac{3}{25}$ _____ _____

d. $\frac{7}{9}$ _____ _____

e. $\frac{7}{16}$ _____ _____

f. $\frac{1}{8}$ _____ _____

g. $\frac{2}{7}$ _____ _____

h. $\frac{1}{5}$ _____ _____

i. $\frac{5}{6}$ _____ _____

j. $\frac{2}{10}$ _____ _____

TEST

2. Write the following percents as fractions and decimals.

a. 8% _____ _____

b. 12% _____ _____

c. 19% _____ _____

d. 22% _____ _____

e. 29% _____ _____

f. 32% _____ _____

g. 45% _____ _____

h. 72% _____ _____

i. 250% _____ _____

j. 100% _____ _____

TEST

3. Write the following decimals as fractions and percents.

a. .14 _____ _____

b. .25 _____ _____

c. .375 _____ _____

d. .46 _____ _____

e. .50 _____ _____

f. .66 _____ _____

g. 1.75 _____ _____

h. 3.80 _____ _____

i. .875 _____ _____

j. 1.875 _____ _____

CONVERTING PERCENTS
UNIT VII

ANSWERS TO TEST

1. a. .33---; $33\frac{1}{3}\%$ or 33.33%
   b. .66---; $66\frac{2}{3}\%$ or 66.66%
   c. .12; 12%
   d. .777---; $77\frac{7}{9}\%$ or 77.77%
   e. .4375; 43.75% or $43\frac{3}{4}\%$
   f. .125; 12.5% or $12\frac{1}{2}\%$
   g. .2857; 28.57% or $28\frac{4}{7}\%$
   h. .20; 20%
   i. .833---; $83\frac{1}{3}\%$ or 83.33%
   j. .20; 20%

2. a. $\frac{2}{25}$; .08
   b. $\frac{3}{25}$; .12
   c. $\frac{19}{100}$; .19
   d. $\frac{11}{50}$; .22
   e. $\frac{29}{100}$; .29
   f. $\frac{8}{25}$; .32
   g. $\frac{9}{20}$; .45
   h. $\frac{18}{25}$; .72
   i. $\frac{5}{2}$ or $2\frac{1}{2}$; 2.50
   j. $\frac{1}{1}$; 1

3. a. $\frac{7}{50}$; 14%
   b. $\frac{1}{4}$; 25%
   c. $\frac{3}{8}$; 37.5% or $37\frac{1}{2}\%$
   d. $\frac{23}{50}$; 46%
   e. $\frac{1}{2}$; 50%
   f. $\frac{33}{50}$; 66%
   g. $\frac{7}{4}$; 175%
   h. $\frac{19}{5}$; 380%
   i. $\frac{7}{8}$; 87.5% or $87\frac{1}{2}\%$
   j. $\frac{15}{8}$; 187.5% or $187\frac{1}{2}\%$

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

UNIT OBJECTIVE

After completing this unit, the student should be able to solve problems involving percents and apply percents to practical situations. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Define terms related to percent.
2. Solve problems involving percents.
3. Solve problems involving percent of increase or decrease.
4. Compute the cost of an item on sale.
5. Compute the percent of income spent for each item, given a list of expenses and the annual income for a family.

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Supplement #1 — Equations and Percents
- D. Pretest
- E. Answers to pretest
- F. Information sheet
- G. Assignment sheets
  1. Assignment Sheet #1 — Figure Percents
  2. Assignment Sheet #2 — Find the Percent of a Number
  3. Assignment Sheet #3 — Find What Percent One Number Is of Another
  4. Assignment Sheet #4 — Find the Original Number When Given the Percent
  5. Assignment Sheet #5 — Find Percent of Increase or Decrease
  6. Assignment Sheet #6 — Calculate Discounts
  7. Assignment Sheet #7 — Calculate Percent of Family Income
- H. Answers to assignment sheets
- I. Test
- J. Answers to test

II. Instructor's guide

- A. Order (or obtain) materials to supplement unit.
- B. Give pretest.
- C. Critique pretest and go over results in class.

(NOTE: Be sure to take up pretests after discussing them in class. Students who score 85 percent or higher on the pretest do not need to study this unit.)

SUGGESTED ACTIVITIES

D. Discuss unit and specific objectives.

E. Discuss information and assignment sheets.

1. Review terms related to percents using Information Sheet, Section I.

2. Explain how to solve percent problems using Information Sheet, Section II and Supplement #1.

   - Put examples of all three types of percent problems on the chalkboard; work through each problem as demonstrated in the Supplement. Have the students take notes.

   - Give the students some sample problems to work through; go over answers in class. Have students put their solutions on the board, showing how they worked the problems.

   - Have students complete Assignment Sheets #1 through #4.

   - Go over answers in class.

3. Demonstrate how to solve problems involving percent of increase or decrease; use Information Sheet, Section III.

   - Put examples on the chalkboard showing how to solve increases and decreases in percents; have the students take notes.

   - Give the students some sample problems to work, and go over the answers in class.

   - Have students complete Assignment Sheet #5; go over answers in class.

4. Explain how to compute the cost of a sale item using Information Sheet, Section IV.

   - Put examples on the chalkboard showing how to figure the cost of a sale item using percents; have the students take notes.

   - Give the students some sample problems to work, and go over the answers in class.

   - Have the students complete Assignment Sheet #6.

   - Go over answers in class.

5. Explain how to compute the percent of family income spent for various expenses given the expenses and annual income of the family; use Information Sheet, Section V.

   - Put examples on the chalkboard showing how to figure the percentages of expenses of a family income; have the students take notes.

SUGGESTED ACTIVITIES

- Give the students some sample problems to work, and go over the answers in class.
- Have students complete Assignment Sheet #7.
- Go over answers in class.

F. Give test.

G. Critique test and discuss in class.

H. Reteach and retest as necessary.

III. Unit references — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instruction Materials Center, 1972.

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

SUPPLEMENT #1 — EQUATIONS AND PERCENTS

You will find three different types of percent problems. Each type involves three numbers. When you know two of the numbers, you can write an equation and solve it to find the third number.

1. *Finding a Percent of a Number*

   What number is 65% of 800?

   Equation:

   $k = .65 \times 800$

   Solution:

   $k = .65 \times 800$

   $k = 520$

   Answer:

   520 is 65% of 800

2. *Finding What Percent a Number is of Another*

   What Percent of 8 is 4?

   Equation:

   $k \times 8 = 4$

   Solution:

   $k \times 8 = 4$

   $k = \frac{4}{8}$

   $k = \frac{1}{2}$ or 50%

   Answer:

   4 is 50% of 8

SUPPLEMENT #1

3. *Finding a Number, Given Its Percent*

24 is 6% of *what number*?

Equation:

$24 = 6\% \times k$

Solution:

$24 = .06 \times k$

$\frac{24}{.06} = k$

$400 = k$

Answer:

24 is 6% of 400

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

PRETEST

NAME _____ SCORE _____

1. Define the following terms.

   a. Percent — _____

   _____

   b. One hundred percent — _____

   _____

2. Solve the following percent problems.

   a. A rancher sold 45 of his horses. If these were 75% of his herd, how many horses did he have in his entire herd?

   b. An engine with 350 horsepower runs with an 83% efficiency. How much horsepower is actually delivered?

PRETEST

c. Bill bought a lot for $6,000.00 and sold it for a profit of $4,260.00. What is his percent of profit?

3. Solve the following problems of percent of increase or decrease.

a. Last year the Rodeo Association had 125 members. This year it has 230 members. What is the percent of increase?

b. A set of sterling silver earrings priced at $42.00 went on sale for $37.00. What was the percent of decrease?

PRETEST

4. A $195.00 pair of boots is on sale at a discount of 30%. What is the sale price?

5. Find what percent was spent for each of the following items from a rancher's income of $2,500.00.

   a. Horse feed-$150.00

   b. Utilities-$75.00

   c. Labor-$600.00

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ANSWERS TO PRETEST

1. a. Hundredths
   b. All of the items or things being discussed

2. a. 60 horses
   b. 290.5 horsepower
   c. 71% profit

3. a. 84%
   b. 11.9%

4. $136.50

5. a. 6%
   b. 3%
   c. 24%

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

A. Percent — Hundredths

EXAMPLE: 20 things out of 100 would be $^{20}/_{100}$ or 20%

B. One hundred percent (100%) — All of the things or items being discussed

II. Solving percent problems

A. Write the percent over 100

B. Write the part being considered over the whole amount

C. Write the two fractions with an equal sign between them

D. Cross multiply and solve the resulting equation

EXAMPLE: 16 is what percent of 80?

$$\frac{p}{100} = \frac{16}{80}$$

$$80p = 1600$$

$$p = \frac{1600}{80}$$

$$p = 20\%$$

EXAMPLE: 5% of 97.3 equals what number?

.05 × 97.3 equals n

$$\frac{5}{100} = \frac{n}{97.3}$$

$$100n = 486.5$$

$$n = \frac{486.5}{100}$$

$$n = 4.865$$

INFORMATION SHEET

EXAMPLE: 26 is 40% of what number?

$$\frac{40}{100} = \frac{26}{n}$$

$$40n = 2600$$

$$n = \frac{2600}{40}$$

$$n = 65$$

III. Percent of increase and decrease

A. Write the percent over 100

B. Write the amount of increase or decrease over the original amount

C. Write these two fractions with an equal sign between them

D. Cross multiply and solve the resulting equation

EXAMPLE: The price of apples increased from 60 cents per pound to 72 cents per pound. What was the percent of increase?

Solution: What was the increase in price? 12 cents
What was the original price? 60 cents

$$\frac{12}{60} = \frac{n}{100}$$

$$60n = 1200$$

$$n = \frac{1200}{60}$$

$$n = 20\%$$

IV. Computing sale prices

A. Find the discount

1. Write the percent over 100
2. Write the amount of discount over the original price
3. Write the two fractions with an equal sign between them
4. Cross multiply and solve the resulting equation

INFORMATION SHEET

EXAMPLE: A coat which sells for $50 is on sale at a discount of 10%. How much is being taken off the price?

$$\frac{10}{100} = \frac{n}{50}$$

$$100n = 500$$

$$n = \frac{500}{100}$$

$$n = \$5$$

B. Find the sale price

1. Using the discount

   a. Figure the amount of discount

   b. Subtract the discount from the original price

      EXAMPLE: In the example for A above, the discount is $5 and the original price is $50.
      $50 - $5 = $45 sale price

2. Using the percent

   a. Subtract the discount from 100%

   b. Write this percent over 100

   c. Write the sale price over the original price

   d. Write the two fractions with an equal sign between them

   e. Cross multiply and solve the resulting equations

      EXAMPLE: A coat which sells for $50 is on sale at a discount of 10%. What will you have to pay for it?

      Solution:
      $$\begin{array}{r} 100\% \\ -\ 10\% \\ \hline 90\% \end{array}$$

      $$\frac{90}{100} = \frac{n}{50}$$

      $$100n = 4500$$

      $$n = \frac{4500}{100}$$

      $$n = 45$$

INFORMATION SHEET

V. Computing percent of income

A. Write the percent over 100

B. Write the amount spent for an item over the total income

C. Write the two fractions with an equal sign between them

D. Cross multiply and solve the resulting equation

EXAMPLE: A family has an income of $9,000 a year. They spend $2,250 for food. What percent of their income is spent on food?

$$\frac{n}{100} = \frac{2,250}{9,000}$$

$$9000n = 225,000$$

$$n = \frac{225,000}{9,000}$$

$$n = \frac{225}{9}$$

$$n = 25\%$$

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #1 — FIGURE PERCENTS

NAME _____ SCORE _____

1. What does it mean to say 100 percent of the class is present today?

2. There are 100 pupils in Podunk High School. Fourteen of them are absent. What percent of the pupils are absent?

3. If 14 of the pupils are absent (Problem 2), how many are present? What percent are present?

ASSIGNMENT SHEET #1

4. There are 100 cents in a dollar. Twenty-five cents is what percent of a dollar? Five cents is what percent of a dollar?

5. There are 100 books in a library. Ninety-four have been read. What percent of the books have been read?

6. If 94 of the books (Problem 5) have been read, how many have not been read? What percent have not been read?

ASSIGNMENT SHEET #1

7. If 11% of the pupils in a school are absent, what percent are present?

8. If 6% of the books that a store had in stock were not sold, what percent were sold?

9. If 60% of the cyclists in town had licenses, what percent did not have licenses?

ASSIGNMENT SHEET #1

10. Byrl raises white rats. Ten percent of his rats are a year old and 40% are over a year old. What percent are less than a year old?

11. Richard has three sizes of traps; No. 1 traps, No. 1½ traps, and No. 2 traps. Eighty percent of his traps are No. 1 traps, and 15% are No. 1½ traps. What percent are No. 2 traps?

12. The Smiths spent 22% of their income for their house, 17% for food, 15% for clothes, and 8% for fun. What percent was left for other things?

ASSIGNMENT SHEET #1

13. Chester has finished 75% of the painting he is doing. What percent does he still have to do?

14. Betty has completed 40% of her dress. What percent does she still have to do?

15. If you have completed 93% of these problems, what percent do you still have to do?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #2 — FIND THE PERCENT OF A NUMBER

NAME _____ SCORE _____

1. Solve each of the following problems. In each problem, "x" represents the number you are looking for.

   a. 3% of 72 = x

   b. 5% of 18 = x

   c. x = 33⅓% of 96

ASSIGNMENT SHEET #2

d. 40% of 125 = x

e. 68% of 63.5 = x

f. x = 12½% of 140.8

ASSIGNMENT SHEET #2

g. x = 1% of 103

h. x = 37½% of 152

i. 50% of 32.8 = k

ASSIGNMENT SHEET #2

j. 7% of 163 = k

2. Solve these story problems.

a. There are 220 pupils in a class. Sixty percent of the pupils are boys. How many are boys?

b. One day 5% of the 20 pupils in Mrs. Moore's class made perfect scores on a spelling test. How many made perfect scores?

ASSIGNMENT SHEET #2

c. Mr. McGill bought a new saw regularly selling for $120 at a sale and saved 20%. How much did he save?

d. The number of people at the game this week was 75% of what it was last week. Last week there were 800 people at the game. How many people were at the game this week?

e. Thirty-three and one-third percent of 150 tickets have been sold. How many tickets have been sold?

ASSIGNMENT SHEET #2

f. What is 75% of 20?

g. Last week there was lots of illness. On one day only 65% of the 120 pupils in Podunk School were present. How many pupils were present?

h. The Podunk basketball team played 20 games this year and won 80% of them. How many games did the team win?

ASSIGNMENT SHEET #2

i. Randall took a spelling test on which there were 40 words. He got 90% of them right. How many words did he spell right?

j. Last year the Community Chest raised $83,736.56. This year the workers raised only 87½% as much. How much money was raised this year?

k. A pencil was 8 inches long when new. It is only 75% as long now. How long is it now?

ASSIGNMENT SHEET #2

l. Eighty percent of Bill's 20 friends have younger brothers or sisters. How many of Bill's friends do not have younger brothers or sisters?

m. If you earn a take-home pay of $260, and budget 17% of this for a car payment, could you afford to pay $46.73 a month for a car?

n. A concrete mixture contains 30% water. A truck delivers 3,400 pounds of concrete. How many pounds of water are in the concrete?

ASSIGNMENT SHEET #2

o. You are going to take a test which has 60 questions. The teacher says a score of 70% is passing. How many right answers must you have to pass?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #3 — FIND WHAT PERCENT ONE NUMBER IS OF ANOTHER

NAME _____ SCORE _____

1. Solve these problems.

   a. 8 is what percent of 16?

   b. 60 is what percent of 160?

   c. What percent of 120 is 30?

ASSIGNMENT SHEET #3

d. $40 is what percent of $800?

e. $14 is what percent of $210?

f. What percent of 32 is 8?

g. 19 is what percent of 38?

ASSIGNMENT SHEET #3

h. 60 is what percent of 210?

i. $12 is what percent of $60?

j. What percent of 50 is 35?

ASSIGNMENT SHEET #3

2. Solve these story problems.

   a. A team played 50 games and won 25. What percent of the games did they win?

   b. Bill answered 47 questions correctly on a test of 50 questions. What percent of the questions did he answer correctly?

   c. In a class of 48 students, six were absent. What percent of the class was absent?

ASSIGNMENT SHEET #3

d. A store charged $240 for a refrigerator and made a profit of $40. What was the percent of profit?

e. Four hundred square feet of tile has been ordered for tiling a 320 square-foot room. What percentage of the amount purchased is allowed for waste and matching?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #4 — FIND THE ORIGINAL NUMBER WHEN GIVEN THE PERCENT

NAME _____ SCORE _____

1. Solve these problems.

   a. 9% of what number is 81?

   b. 10% of what number is 14?

   c. 6 is 12% of what number?

ASSIGNMENT SHEET #4

d. 100% of what number is 22?

e. 160 is 50% of what number?

f. 23 is 10% of what number?

ASSIGNMENT SHEET #4

g. 8% of what number is 22?

h. 12 is 3% of what number?

i. $33\frac{1}{3}\%$ of what number is 16?

ASSIGNMENT SHEET #4

j. 30 is 1% of what number?

2. Solve these story problems.

a. A steer dressed out at 420 pounds. If 30% of the weight was lost in processing, what was the original weight of the steer?

b. If 12% is allowed for waste when transporting strawberries, how many quarts did you have originally if 3,168 quarts are now available for sale?

ASSIGNMENT SHEET #4

c. A man sold 320 acres of land. This was 20% of his entire farm. How many acres were in the entire farm?

d. A carpenter built a house using 598 board feet of lumber. If eight percent of the lumber was lost in cutting, how much lumber did he have originally?

e. A ball team won 38 games, which was 95% of their scheduled games. How many games were on their schedule?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #5 — FIND PERCENT OF INCREASE OR DECREASE

NAME _____ SCORE _____

Solve the following problems.

1. Land that originally sold for $80 an acre is now selling for $260 an acre. What is the percent of increase?

2. A car that sold for $1500 is now selling for $1100. What is the percent of decrease?

3. A man plowed 15 acres of land on Monday and 23 acres on Tuesday. What was the percent of increase?

ASSIGNMENT SHEET #5

4. A man earning $110 per week received a $5 per week raise. What was the percent of increase in his pay?

5. Last year Glenn earned $50 per week. This year he earns $65 per week. What is the percent of increase in his pay?

6. A company had 500 employees last year and 300 employees this year. What is the percent of decrease?

ASSIGNMENT SHEET #5

7. Mary bought a typewriter for $80 and sold it for $68. What is the percent of decrease?

8. A suit that sold last year for $60 now sells for $72. What is the percent of increase in price?

9. A quart of milk cost 10 cents in 1940. If a quart of milk costs 30 cents today, what is the percent of increase in price?

ASSIGNMENT SHEET #5

10. A car which costs the dealer $2500 sells for $3000. What is the percent of increase in price?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #6 — CALCULATE DISCOUNTS

NAME _____ SCORE _____

Solve the following problems.

1. A set of wrenches marked to sell for $159.95 was put on sale at a discount rate of 15%. What is the selling price?

2. What is the selling price of an article marked at $499.95 and selling at a discount of 23%.

3. If an 18% discount is allowed on an article marked at $350, what is the selling price? What is the amount of discount?

ASSIGNMENT SHEET #6

4. Automobile tires are on sale for 20% off. What will a set of four tires cost that were marked to sell at $45.00 each? What was the discount on each tire?

5. Mr. Matthews decided to decrease the price of an $89.50 lawn mower by 20%. What was the sale price?

6. At a sale the sign read "20% off on all dresses." How much did Joan save on a dress which sells for $35.

ASSIGNMENT SHEET #6

7. A toaster priced at $18.95 was sold for $13.95. What was the discount? What was the percent of discount (to the nearest percent)?

8. A coffee maker priced at $30 is reduced $10 in price. What is the percent of the discount?

9. An 8-track player originally sold for $60. Jim bought it for 40% off. What did he pay for the player?

ASSIGNMENT SHEET #6

10. Harold bought a $45 power saw for 15% off. How much did he pay for the saw?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ASSIGNMENT SHEET #7 — CALCULATE PERCENT OF FAMILY INCOME

NAME _____ SCORE _____

Solve the following problems.

1. A man with an income of $7560.00 spent 12% of the family budget on insurance. What did he spend on insurance?

2. A man who earns $7200.00 a year spends $2880.00 for food; $720.00 for rent; $576.00 for insurance; $1152.00 for a new car; $1512.00 for clothing; and $360.00 for miscellaneous items. What percent of his salary was spent for each item?

ASSIGNMENT SHEET #7

3. A family budget of $8900.00 was spent in the following manner: food, $1023.50; rent, $823.25; insurance, $1246.00; car expenses, $1401.75; clothing, $2091.50; savings $1379.50; and miscellaneous, $934.50. What percent of the family budget was spent for each item?

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. All students are present
2. 14%
3. 86, 86%
4. 25%, 5%
5. 94%
6. 6, 6%
7. 89%
8. 94%
9. 40%
10. 50%
11. 5%
12. 38%
13. 25%
14. 60%
15. 7%

Assignment Sheet #2

1. a. 2.16
   b. .9
   c. 32
   d. 50
   e. 43.18
   f. 17.6
   g. 1.03
   h. 57
   i. 16.4
   j. 11.41

2. a. 132 boys
   b. 1 pupil
   c. $24
   d. 600 people
   e. 50 tickets
   f. 15
   g. 78 pupils
   h. 16 games
   i. 36 words
   j. $73,269.49
   k. 6 inches
   l. 4 friends
   m. No
   n. 1,020 pounds
   o. 42 answers

Assignment Sheet #3

1. a. 50%
   b. 37.5%
   c. 25%
   d. 5%
   e. $6\frac{2}{3}\%$
   f. 25%
   g. 50%
   h. $28\frac{4}{7}\%$
   i. 20%
   j. 70%

ANSWERS TO ASSIGNMENT SHEETS

2. a. 50%
   b. 94%
   c. $12\frac{1}{2}\%$
   d. $16\frac{2}{3}\%$
   e. 20%

Assignment Sheet #4

1. a. 900
   b. 140
   c. 50
   d. 22
   e. 320
   f. 230
   g. 275
   h. 400
   i. 48
   j. 3000

2. a. 600 pounds
   b. 3600 quarts
   c. 1600 acres
   d. 650 board feet
   e. 40 games

Assignment Sheet #5

1. 325%
2. $26\frac{2}{3}\%$
3. $53\frac{1}{3}\%$
4. $4\frac{6}{11}\%$
5. 30%
6. 40%
7. 15%
8. 20%
9. 200%
10. 20%

Assignment Sheet #6

1. $135.96
2. $384.96
3. $287, $63
4. $144, $9
5. $71.60
6. $7
7. $5, 26%
8. $33\frac{1}{3}\%$
9. $36
10. $38.25

Assignment Sheet #7

1. $907.20
2. Food—40%
   Rent—10%
   Insurance—8%
   Car—16%
   Clothing—21%
   Miscellaneous—5%

ANSWERS TO ASSIGNMENT SHEETS

3. Food—11½%
   Rent—9¼%
   Insurance—14%
   Car—15¾%
   Clothing—23½%
   Savings—15½%
   Miscellaneous—10½%

SOLVING PROBLEMS USING PERCENTS
UNIT VIII

TEST

NAME _____ SCORE _____

1. Define the following terms.

   a. Percent — _____

   _____

   b. One hundred percent — _____

   _____

2. Solve these percent problems.

   a. A man sells 160 acres of land. If this was 20% of his farm, how many acres were in the entire farm?

   b. Joe spent $16\frac{2}{3}\%$ of his money. If he spent $24, how much money did he have to begin with?

TEST

c. A motor with 150 horsepower runs with an 87% efficiency. How much horsepower is actually delivered?

d. If wheat shrinks 12% while in storage, how many bushels will be left from 2100 bushels placed in storage?

e. A dealer bought a car for $2400 and sold it for $3000. What is his percent of profit?

TEST

f. If 1500 pounds of ore yield 130 pounds of iron, what percent of the ore is iron?

3. Solve these problems involving percent of increase or decrease.

a. Last year there were 1860 students enrolled in our high school. This year there are 1581 students enrolled. What was the percent of decrease?

TEST

b. A mixer selling for $40 went up to $48. What was the percent of increase?

4. A $45 radio is on sale at a discount of 10%. What is the sale price?

5. Find what percentage was spent for each of the following items from a family income of $6000.00

   a. Food — $1800.00

TEST

b. Rent — $480.00

c. Clothing — $1000.00

d. Savings — $240.00

TEST

e. New car — $2000.00

f. Miscellaneous — $480.00

SOLVING PROBLEMS USING PERCENTS
UNIT VII

ANSWERS TO TEST

1. a. Hundredths
   b. All of the things or items being discussed

2. a. 800 acres
   b. $144
   c. 130.50 horsepower
   d. 1848 bushels
   e. 25%
   f. $8\frac{2}{3}\%$

3. a. 15%
   b. 20%

4. $40.50

5. a. 30%
   b. 8%
   c. $16\frac{2}{3}\%$
   d. 4%
   e. $33\frac{1}{3}\%$
   f. 8%

REVIEWING DECIMALS AND PERCENTS
UNIT IX

UNIT OBJECTIVE

After completing this unit, the student should be able to solve problems involving the four basic operations with decimals, write the numerical representation of the word number, round decimals, convert percents to decimals and fractions, and solve story problems using percents. This knowledge will be evidenced by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Write a given word number as a decimal numeral.
2. Round numbers to the nearest unit, tenth, hundredth, or thousandth.
3. Solve problems involving addition of decimals.
4. Solve subtraction problems involving decimals.
5. Solve problems involving multiplication of decimals.
6. Solve division problems involving decimals.
7. Convert percents to decimals and fractions.
8. Solve problems using percents.

REVIEWING DECIMALS AND PERCENTS
UNIT IX

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Information sheet

D. Assignment sheets

1. Assignment Sheet #1 — Write Decimal Numerals and Round Decimals
2. Assignment Sheet #2 — Add Decimals
3. Assignment Sheet #3 — Subtract Decimals
4. Assignment Sheet #4 — Multiply Decimals
5. Assignment Sheet #5 — Divide Decimals
6. Assignment Sheet #6 — Convert Percents
7. Assignment Sheet #7 — Solve Problems Using Percents

E. Answers to assignment sheets

F. Test

G. Answers to test

II. Instructor's guide

A. Order (or obtain) materials to supplement unit.

B. Discuss unit and specific objectives.

C. Discuss unit and specific objectives.

D. Discuss information and assignment sheets.

1. Review writing word numbers as decimal numerals; use Information Sheet, Section I.
2. Review rounding numbers to the nearest unit, tenth, hundredth, and thousandth; use Information Sheet, Section II.

- Have students complete Assignment Sheet #1.
- Go over answers in class.

SUGGESTED ACTIVITIES

3. Review adding decimal numerals using Information Sheet, Section III.
   - Have students complete Assignment Sheet #2.
   - Go over answer in class.
4. Review subtracting decimal numerals using Information Sheet, Section IV.
   - Have students complete Assignment Sheet #3.
   - Go over answers in class.
5. Review multiplying decimal numerals using Information Sheet, Section V.
   - Have students complete Assignment #4. Go over answers in class.
6. Review dividing decimal numerals using Information Sheet, Section VI.
   - Have students complete Assignment Sheet #5.
   - Go over answers in class.
7. Review converting percents to decimals and fractions; use Information Sheet, Section VII.
   - Have students complete assignment Sheet #6.
   - Go over answers in class.
8. Review solving problems using percents; use Information Sheet, Section VIII.
   - Have students complete Assignment Sheet #7.
   - Go over answers in class.

E. Give test.

F. Critique test and discuss in class.

G. Reteach and retest as necessary.

III. Unit reference — Spann, Margaret. *Related Vocational Math*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1972.

REVIEWING DECIMALS AND PERCENTS
UNIT IX

INFORMATION SHEET

I. Writing decimal numerals

   A. The word "and" locates the decimal point

   B. The final word indicates the number of decimal places

II. Rounding decimals

   A. Look at the digit to the right of the desired decimal place

   B. If less than 5, round down; if 5 or greater, round up

III. Adding decimals

   A. Write the numbers in columns with the decimal points in a straight line

   B. Add the numbers

   C. Place the decimal point in the answer directly below the decimal points in the addends

IV. Subtracting decimals

   A. Write the numerals in columns with the decimal points in a straight line

   B. Subtract the numbers

   C. Place the decimal point in the answer directly below the decimal points in the problem

V. Multiplying decimals

   A. Multiply the numbers

   B. Count all the decimal places in all the factors

   C. Beginning at the right of the product count off this number of places and put in the decimal point

VI. Dividing decimals

   A. Whole number divisor

      1. Place the decimal point in the answer directly above the decimal point in the dividend

      2. Divide the numbers

INFORMATION SHEET

B. Decimal fraction divisor

1. Move the decimal point in the divisor to make a whole number
2. Move the decimal point in the dividend the same number of places to the right
3. Place the decimal point in the answer above the new decimal point
4. Divide the number

VIII. Converting fractions, decimals and percents

A. Expressing fractions as decimals — divide the numerator by the denominator

B. Expressing fractions as percents

1. Express the fraction in decimal form
2. Move the decimal point two places to the right
3. Place the % symbol after the number

C. Expressing percents as fractions

1. Drop the percent symbol
2. Place the number over 100

(NOTE: Reduce to simplest form.)

D. Expressing percents as decimals

1. Drop the percent symbol
2. Move the decimal point two places to the left

E. Expressing decimals as fractions

1. If there is one decimal place, drop the decimal point and place the number over 10
2. If there are two decimal places, drop the decimal point and place the number over 100
3. If there are three decimal places, drop the decimal point and place the number over 100

(NOTE: Do not forget to reduce to simplest form.)

INFORMATION SHEET

F. Expressing decimals as percents

1. Move the decimal point two places to the right
2. Place the percent symbol after the number

VIII. Solving percent problems

A. Calculating percent

1. Write the percent over 100
2. Write the part being considered over the whole amount
3. Write the two fractions with an equal sign between them
4. Cross multiply and solve the resulting equation

B. Calculating percent of increase or decrease

1. Write the percent over 100
2. Write the amount of increase or decrease over the original amount
3. Write these two fractions with an equal sign between them
4. Cross multiply and solve the resulting equation

C. Calculating sale prices

1. Find the discount
   a. Write the percent over 100
   b. Write the amount of discount over the original price
   c. Write the two fractions with an equal sign between them
   d. Cross multiply and solve the resulting equation
2. Find the sale price
   a. Using the discount
      (1) Figure the amount of discount
      (2) Subtract the discount from the original price
   b. Using the percent
      (1) Subtract the percent of discount from 100%
      (2) Write this percent over 100

INFORMATION SHEET

(3) Write the sale price over the original price

(4) Write the two fractions with an equal sign between them

(5) Cross multiply and solve the resulting equation

D. Calculating percent of income

1. Write the percent over 100
2. Write the amount spent for an item over the total income
3. Write the two fractions with an equal sign between them
4. Cross multiply and solve the resulting equation

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #1 — WRITE DECIMAL NUMERALS AND ROUND DECIMALS

NAME _____ SCORE _____

1. Write the decimal numerals for the following word numbers.

   a. Five and six hundred twenty-two thousandths _____

   b. One and six hundredths _____

   c. Two and nine tenths _____

   d. Ten and thirty-four thousandths _____

   e. Fifty-seven ten-thousandths _____

2. Round each of the following to the nearest unit.

   a. 6.3 _____ d. 2.4 _____

   b. 18.7 _____ e. 1.61 _____

   c. .8 _____ f. 3.27 _____

3. Round each of the following to the nearest tenth.

   a. 1.83 _____ d. 3.96 _____

   b. .42 _____ e. .87 _____

   c. .16 _____ f. .482 _____

4. Round each of the following to the nearest hundredth.

   a. .047 _____ d. 1.173 _____

   b. 6.009 _____ e. .619 _____

   c. .321 _____ f. .498 _____

ASSIGNMENT SHEET #1

5. Round each of the following to the nearest thousandth.

a. .8743 _____ d. .0006 _____

b. .5617 _____ e. .1234 _____

c. .0706 _____ f. .8397 _____

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #2 — ADD DECIMALS

NAME _____ SCORE _____

Solve the following addition problems.

1.
$$\begin{array}{r} .62 \\ 43.7 \\ +\ 9.584 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 193.47 \\ 6.091 \\ +\ 52.6 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 843.794 \\ .9041 \\ +\ .85 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 684.1 \\ 74.1 \\ +\ 9.037 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 9.724 \\ 513.04 \\ +\ 2.1 \\ \hline \end{array}$$

6.
$$\begin{array}{r} .0075 \\ 7316.988 \\ +\ 523.1 \\ \hline \end{array}$$

7. 8 + .94 + 16.3 =

8. .67 + 18.9 + 141 =

9. 394 + 6.72 + .183 =

10. .89 + 6.043 + .0791 =

ASSIGNMENT SHEET #2

11. 875.41 + 4167 + 6.891 =

12. .76 + .8943 + .004 + 7 =

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #3 — SUBTRACT DECIMALS

NAME _____ SCORE _____

Solve the following subtraction problems.

1. $\begin{array}{r} 89.745 \\ -\ 31.231 \\ \hline \end{array}$

2. $\begin{array}{r} 239.72 \\ -\ 123.5 \\ \hline \end{array}$

3. $\begin{array}{r} 15.97 \\ -\ 8.894 \\ \hline \end{array}$

4. 73.42 – 69.3 =

5. 645.7 – 197.523 =

6. 6.89 – 4.931 =

7. 74 – 57.93 =

8. 100 – 76.52 =

9. 25.4 – 17.86 =

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #4 — MULTIPLY DECIMALS

NAME _____ SCORE _____

Solve the following multiplication problems.

1. $\begin{array}{r} 6.435 \\ \times\ .821 \\ \hline \end{array}$

2. $\begin{array}{r} .376 \\ \times\ .04 \\ \hline \end{array}$

3. $\begin{array}{r} 187.2 \\ \times\ .354 \\ \hline \end{array}$

4. 5.74 × .8 =

5. .6007 × 89 =

6. 43.5 × .017 =

7. 8.76 × .01 =

8. 9,832 × .001 =

9. 43.61 × 10 =

10. 43.61 × 100 =

11. .8976 × 1,000 =

12. 7.34 × .1 =

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #5 — DIVIDE DECIMALS

NAME _____ SCORE _____

Solve the following division problems.

1. a. $.12\overline{)144}$ b. $12\overline{).144}$ c. $1.2\overline{).144}$

d. $.15\overline{).225}$ e. $1.5\overline{)22.5}$ f. $1.5\overline{)225}$

g. $.8\overline{)6.24}$ h. $.08\overline{)624}$ i. $8\overline{).624}$

j. $.11\overline{)14.3}$ k. $11\overline{)1.43}$ l. $1.1\overline{)14.3}$

2. a. $7 \div 8 =$ b. $2 \div 3 =$ c. $3 \div 4 =$

d. $4.7 \div 24 =$ e. $.693 \div 3.5 =$ f. $96.7 \div 10 =$

ASSIGNMENT SHEET #5

g. 6.205 ÷ .25 =

h. 4.932 ÷ 100 =

i. .288 ÷ 1.2 =

j. 76 ÷ 100 =

k. 48.2 ÷ .21 =

l. 637.2 ÷ 1000 =

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #6 — CONVERT PERCENTS

NAME _____ SCORE _____

1. Write the following fractions as decimals and percents.

a. $\frac{1}{2}$

b. $\frac{7}{16}$

c. $\frac{4}{9}$

d. $\frac{1}{4}$

e. $\frac{2}{9}$

f. $\frac{3}{4}$

g. $\frac{1}{3}$

h. $\frac{2}{6}$

i. $\frac{5}{8}$

j. $\frac{4}{5}$

ASSIGNMENT SHEET #6

2. Write the following percents as fractions and decimals.

   a. 25%

   b. 15%

   c. 36%

   d. 70%

   e. 21%

   f. 3%

   g. 10%

   h. 44%

   i. 33.3%

   j. 50%

3. Write the following decimals as fractions and percents.

   a. .53

   b. .68

   c. .94

   d. .12

   e. .37

   f. .44

   g. .25

   h. .746

   i. .05

   j. 3.75

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ASSIGNMENT SHEET #7 — SOLVE PROBLEMS USING PERCENTS

NAME _____ SCORE _____

1. Solve the following problems involving percents.

   a. If 13% of the pupils in a school are absent, what percent are present?

   b. If the Smiths spent 12% of their income for food, 22% for car payments, and 18% for house payments, what percent was left for other things?

   c. There are 15 Appaloosa horses in the herd. Eighty percent are mares. How many mares are in the herd?

   d. Thirty three and one-third percent of 150 yearlings have been sold. How many yearlings have been sold?

   e. Mr. Sullivan bought a new saddle that regularly sells for $455.00 at a sale and saved 20%. How much money did he save?

   f. A concrete mixture contains 30% water. A truck delivers 6800 pounds of concrete. How many pounds of water are in the concrete?

ASSIGNMENT SHEET #7

g. A store charged $120.00 for a telephone answering machine and made $20. What was the percent of profit?

h. In a class of 36 students, three were absent. What percent of the class was absent?

i. Mr. Rodman sold 420 of his cattle. This was 80% of his entire herd. How many cattle were in his herd?

j. If 14% is allowed for waste in transporting watermelon, how many pounds did you have originally if you now have 1,200 pounds for sale?

k. Mr. Mack marked his winter shirts down 40%. How much will 4 shirts at an original price of $25.00 now cost?

l. Sam bought a $42.00 coffee maker for 15% off. How much did he pay for the coffee maker?

m. What is the selling price of a bridle marked at $69.99 and selling at a discount of 25%.

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. a. 5.622
   b. 1.06
   c. 2.9
   d. 10.034
   e. .0057

2. a. 6
   b. 19
   c. 1
   d. 2
   e. 2
   f. 3

3. a. 1.8
   b. .4
   c. .2
   d. 4.0
   e. .9
   f. .5

4. a. .05
   b. 6.01
   c. .32
   d. 1.17
   e. .62
   f. .50

5. a. .874
   b. .562
   c. .071
   d. .001
   e. .123
   f. .840

Assignment Sheet #2

1. 53.904
2. 252.161
3. 845.5481
4. 767.237
5. 524.864
6. 7,840.0955
7. 25.24
8. 160.57
9. 400.903
10. 7.0121
11. 5,049.301
12. 8.6583

Assignment Sheet #3

1. 58.514
2. 116.22
3. 7.076
4. 4.12
5. 448.177
6. 1.959
7. 16.07
8. 23.48
9. 7.54

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

1. 5.283135
2. .01504
3. 66.2688
4. 4.592
5. 53.4623
6. .7395
7. .0876
8. 9.832
9. 4361
10. 4,361
11. 897.6
12. .734

Assignment Sheet #5

1. a. 1,200
   b. .012
   c. .12
   d. 1.5
   e. 15
   f. 150
   g. 7.8
   h. 7,800
   i. .078
   j. 130
   k. .13
   l. 13

2. a. .875
   b. .6666
   c. .75
   d. .19583
   e. .198
   f. 9.67
   g. 24.82
   h. .04932
   i. .24
   j. .76
   k. 229.5238
   l. .6372

Assignment Sheet #6

1. a. .5; 50%
   b. .437; 43.7%
   c. .444; 44.4% or $44\frac{2}{5}\%$
   d. .25; 25%
   e. .222; 22.2% or $22\frac{1}{5}\%$
   f. .75; 75%
   g. .333; 33.3% or $33\frac{1}{3}\%$
   h. .333; 33.3% or $33\frac{1}{3}\%$
   i. .625; or 62.5% or $62\frac{1}{2}\%$
   j. .80; 80%

2. a. $\frac{1}{4}$; .25
   b. $\frac{3}{20}$; .15
   c. $\frac{9}{25}$; .36
   d. $\frac{7}{10}$; .70
   e. $\frac{21}{100}$; .21
   f. $\frac{3}{100}$; .03
   g. $\frac{1}{10}$; .10
   h. $\frac{11}{25}$; .44
   i. $\frac{1}{3}$; .333
   j. $\frac{1}{2}$; .50

ANSWERS TO ASSIGNMENT SHEETS

3. a. $^{53}/_{100}$; 53%
   b. $^{17}/_{25}$; 68%
   c. $^{47}/_{50}$; 94%
   d. $^{3}/_{25}$; 12%
   e. $^{37}/_{100}$; 37%
   f. $^{11}/_{25}$; 44%
   g. $^{1}/_{4}$; 25%
   h. $^{373}/_{500}$; 74.6%
   i. $^{1}/_{20}$; 5%
   j. $3^{3}/_{4}$; 375%

Assignment Sheet #7

1. a. 87%
   b. 48%
   c. 12 mares
   d. 50 yearlings
   e. $91.00
   f. 2,040 pounds
   g. 16.7%
   h. 8.3%
   i. 525 cattle
   j. 1,395.3 pounds
   k. $60.00
   l. $35.70
   m. $52.49

CONVERTING PERCENTS
UNIT IX

TEST

NAME _____ SCORE _____

1. Write the decimal numerals for these word numerals.

   a. Three and forty-four thousandths _____

   b. Sixty-five and six tenths _____

   c. One and eighty-three hundredths _____

2. Round each of the following one decimal place to the nearest unit, tenth, hundredth, or thousandth.

   a. .8634 _____

   b. 4.278 _____

   c. 4.6 _____

   d. 4237.8977 _____

   e. 16.245 _____

   f. 118.7 _____

   g. .19 _____

   h. .0395 _____

   i. .039 _____

   j. 66.66 _____

   k. 36.3 _____

   l. 483.33 _____

3. Solve the following addition problems involving decimals.

   a. 4.167 + 66.82 + 412.93 =

TEST

b. $2.16 + $32.05 + $7.98 + $27.96 =

4. Solve the following subtraction problems involving decimals.

   a. Tom bought one hat for $187.95 and another for $117.88. What was the difference in prices?

   b. $74.66 - $12.45 - $6.89 =

5. Solve the following problems involving multiplication of decimals.

   a. 42.13 × 12.15 =

   b. What is the total cost of 6 pair of jeans that sell for $34.99 each?

6. Solve the following problems involving division of decimals.

   a. $12.4\overline{)62.45}$

TEST

b. Kay spent $96.48 for four matching shirts. How much did each shirt cost?

7. Convert the following percents to decimals and fractions.

a. 40% _____ _____

b. 125% _____ _____

c. 6% _____ _____

d. 25% _____ _____

8. Solve the following problems using percents.

a. A $65.00 silver belt buckle is on sale for $45.50. What is the percent of discount?

b. Forty percent of 800 tickets have been sold. How many tickets are left to sell?

c. The baseball team won 60 games that were 80% of their scheduled games.How many games were on their schedule?

TEST

d. A suit that sold for $145.00 last year now sells for $179.00. What is the percent of increase?

e. John hired fifteen laborers last week, but needed only eight this week. What was the percent of decrease?

f. A $37.99 pair of dress slacks was on sale at 33% discount. What was the sale price?

REVIEWING DECIMALS AND PERCENTS
UNIT IX

ANSWERS TO TEST

1. a. 3.044
   b. 65.6
   c. 1.83

2. a. .863
   b. 4.28
   c. 5
   d. 4237.898
   e. 16.25
   f. 119
   g. .2
   h. .04
   i. .04
   j. 66.7
   k. 36
   l. 483.3

3. a. 483.917
   b. $70.15

4. a. $70.07
   b. $55.32

5. a. 511.8795
   b. $209.94

6. a. 5.0363
   b. $24.12

7. a. .40; $\frac{2}{5}$
   b. 1.25; $1\frac{1}{4}$
   c. .06; $\frac{3}{50}$
   d. .25; $\frac{1}{4}$

8. a. 30%
   b. 480 tickets
   c. 75 games
   d. 23.448%
   e. 46.666%
   f. $25.45